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LONGWORTH, Ian and CHERRY, John (eds.).

Archaeology in Britain since 1945: new directions. With contributions by Nick Ashton *et al.* London, published for the Trustees of the British Museum by British Museum Publications, 1986. 248 pp., 133 figs. £12.50 (£9.50 to visitors to the exhibition).

This book was designed to accompany the British Museum's 1986 exhibition of the same name. The exhibition concentrated on the archaeological contribution to our knowledge of prehistoric, Roman, medieval and post-medieval Britain, illustrating the advances which have been made since the Second World War. The Institute of Archaeology can be said to have played a formative part in these advances, and indeed in the exhibition itself, for 'towards the end of the Second World War an *ad hoc* meeting of some 280 archaeologists held at the Institute of Archaeology drew up a plan for the future of the subject in Britain' (p.7). Thus it is appropriate that the 'book of the exhibition' should be reviewed in these pages.

The book does not pretend to be a catalogue of the exhibits, although much that is discussed or illustrated here did appear in the museum showcases or videos. It is intended as a summary of the present state of knowledge and an introduction to British archaeology for students and the general reader. It is made up of five chapters, all but one written by staff of the British Museum itself. Prehistoric Britain is covered by Ian Longworth, Nick Ashton and Valerie Rigby; Roman Britain by Tim Potter; Anglo-Saxon England by Leslie Webster; Technology, Towns, Castles and Churches by John Cherry; and the Medieval Countryside by John Hurst (the one non-British Museum author). There is also a short glossary, a select bibliography, and a comprehensive index.

Each chapter is prefaced by a map of sites mentioned in the text, and these immediately raise one important point. Is the very *title* of the book accurate? Are we being presented with a survey of archaeology in Britain, or of archaeology in England (and largely southern England at that)? Is the imbalance which the following few simple statistics will show a true reflection of the country as a whole in the respective periods? Is it a reflection of archaeological endeavour

since the war? Is it a reflection of the interests of the individual authors? The editors' introduction tells us that what we shall be reading is 'a personal selection of what to them [the authors] seem the most important achievements within the periods they cover' (p.11). Inevitably, an ambitious scheme such as a book of this kind must involve some selection and much omission, but does it really need to be as drastic as this?

Let us consider the maps, then. That for the prehistoric period shows 124 sites including six in Wales, twelve in Scotland and the Northern Isles, and five in Ireland (both north and south). The chapter entitled 'A Roman province' shows 73 sites, thirteen on or north of Hadrian's Wall (including Carlisle) and seven in Wales. Chapter 3 deals with 'Anglo-Saxon England AD 400-1100' so its parameters are clearly stated, but where can we go for information about the 'Dark Age' sites in Wales or Scotland so ably excavated by Leslie Alcock, among others? Are the northern and western areas of Britain to be cast forever as the 'Celtic fringe'? Where are Dinas Powys, Dunadd and the Irish sites of this period? Chapter 4 is slightly more wide-ranging in that Wales and Scotland together score six points on the map, but Ireland has fallen away totally; the same is true of the final chapter where even Scotland and Wales have disappeared. I can't help feeling that some archaeological colleagues to the north and west must be feeling somewhat neglected.

Still, these omissions must be attributed to the personal choice of the authors, as mentioned above, and I have perhaps pursued the matter too far. Nevertheless, I should like to see equivalent exhibitions and books from Welsh, Scottish and Irish museums. Where would the emphasis then fall?

For the rest, the book does fulfil its stated aims despite its geographical bias. The chapters cover their topics briskly and competently, although much of the subject matter has been published elsewhere. There is little that is *new* in this volume, but it has the virtue of bringing together in easily digestible form a considerable body of archaeological evidence which should help the general reader (and perhaps the aspiring applicant for a university place) to gain an impression of what archaeology has achieved over the past 40 years. A special mention must be made of the excellent drawings and

reconstructions by Simon James which bring the whole subject to life in a most exciting way.

This volume can do no more than skim the surface of a highly complex subject; its select bibliography indicates the next step for the reader, but in itself has to be regarded, like the book as a whole, as a sign-post rather than a goal.

HELEN CLARKE

MIKET, Roger and BURGESS, Colin (eds.).

Between and beyond the Walls: essays on the prehistory and history of North Britain in honour of George Jobey. Edinburgh, John Donald, 1984. xii + 424 pp., illus. £25.00.

George Jobey will be known as the leading prehistorian and field worker among the Romanists of Northumbria and Durham. This book is a great tribute to a distinguished academic and teacher. While I generally disagree with the idea of *Festschriften*, this is one of the exceptions and shows clearly the great esteem of his colleagues for his work.

The twenty contributions presented here are by the specialists who have at one time or another worked with him. The subject matter ranges from Folk Medicine to Celtic Art; from Neolithic long cairns to the techniques of aerial photography. The only thing that they have in common is geography. So it comprises a collection of papers on Jobey's stamping ground mainly up to the Roman period. For anybody wanting a general introduction to work done over the last 40 years in North Britain between the walls this is an excellent work and it has been well edited.

R. F. TYLECOTE

STEAD, I. M., BOURKE, J. B. and BROTHWELL, Don. *Lindow Man: the body in the bog.* London, published for the Trustees of the British Museum by British Museum Publications, 1986. 208 pp., 55 figs., 2 pls. £15.00.

BROTHWELL, Don. *The bog man and the archaeology of people.* London, published for the Trustees of the British Museum by British Museum Publications, 1986. 128 pp., illus. £5.95.

A good deal of publicity surrounded the find, in 1983, of the body of a young adult man, preserved in the acid peat of a raised bog at Lindow Moss in Cheshire, England. Such finds have been made in many parts of northwestern Europe but, apart from the famous Danish bog bodies, very few have been conserved and still fewer have been studied in detail. The British Museum took advantage of Lindow Man's discovery to mount a wide-ranging investigation which involved not only archaeologists, but also anthropologists, pathologists, anatomists, human biologists, dentists, biochemists, photogrammetrists, botanists, palynologists, conservators, chemists, forensic scientists, materials scientists, radiologists, physicists, zoologists, microbiologists and even an ocularist. *Lindow Man* is the formal account of this project. It contains many specialist reports, arranged into four sections. Section I (eleven chapters) deals with the discovery of the body, its excavation, conservation, recording, dating and reconstruction. Biological reports on the body itself are in Section II (eight chapters), including anatomy, radiography, pathology, biochemistry and forensic investigations. Section III (ten chapters) covers pollen analysis and macrofossil evidence from the peat sequence within which the body was found, as well as investigations of the gut contents. The four chapters of Section IV place Lindow Man in his archaeological context, with a survey of bog body finds in Europe, discussion of folklore and a short final summary of the results. At the end of the book is a useful gazetteer of bog body finds in Britain and Ireland.

Section I opens with the discovery of the body during commercial peat cutting operations and its removal, encased in a block of peat. The actual excavation of the body itself was carried out under laboratory

conditions by the British Museum, where it could be kept refrigerated. Details are given of the procedures used to prevent deterioration of the body during its examination, as well as the final conservation measures. A freeze-drying process was employed, resulting in very little shrinkage. Dating the death and burial of Lindow Man proved to be a real problem and the efforts of three separate radiocarbon laboratories (Oxford, British Museum and Harwell) are recorded in three chapters. Samples of bone and soft tissues, taken from the body itself, produced different results at different laboratories. Samples of the peat encasing the body yielded dates which differed yet again. This concentration of several laboratories on one project is unusual and their discussions of possible sources of error make interesting reading, although the differences are not yet resolved. The external form of the body was recorded by photogrammetry and Section I includes a description of the methods used, leading up to what must be a first for archaeology - contour maps of the skin surface of a bog body. This section also includes an account of the reconstruction of Lindow Man's facial features, and describes the two artefacts discovered on the body - a fox fur arm band and a cord, tightly knotted around the neck, collar size twelve and a half!

No stone was left unturned in the investigation of the body itself, covered in the second section of the book. Its skin was analysed for traces of woad or tattooing, its hair for dye, and washings from the skin surface were examined for remains of insects. Scanning electron microscopy was used to examine the cut ends of hair and nails. Various methods of non-invasive examination were also used; magnetic resonance images were made along with two types of radiography - xeroradiography and computed tomography. Both radiographic methods have been applied successfully to the dried tissues of Egyptian and other mummies, but in Lindow Man computed tomography proved more successful at showing detail of the decalcified bones which resulted from burial in acid peat. The skin was, in fact, the best preserved and most robust part of the remains, although muscle and other soft internal tissues were well preserved in places. Whilst the outline of the skin remained intact, its cell structure had been lost and most of its bulk was made up of fibres of collagen (a protein which is one of the major building blocks of the body). These, however, showed all of the microscopic

features of fresh collagen and chemical analysis identified several compounds which would normally be expected to be lost rapidly in the process of decomposition. The medical and forensic chapters are of particular macabre interest, because they show that, while Lindow Man had been generally in good health, he met his death violently. Severe wounds on top of his head would eventually have killed him, but did not, apparently do so immediately. His neck had also been broken, presumably by the cord tied around it, which seems to have been tightened by twisting with a stick. In addition, there was a wound just above the cord in the area of the jugular vein. The pathological and forensic details make fascinating reading.

Pollen analysis, plant macrofossils, and the remains of beetles, water fleas and midges from the peat surrounding the body all suggest that the surface of Lindow Moss was characterised by peaty pools at the time of the killing. Indeed, the body seems to have been pitched face downwards in one of the pools. Inside the body cavity, the stomach and parts of the small intestine survived, yielding some 20g of contents which were investigated for plant and animal remains. All the details of identification and their interpretation are given in Section III. The last meal seems to have been a wheat and barley bread - bread rather than gruel, because electron spin resonance spectroscopy showed that chaff in the mixture had been heated to 200-250°C. Also identified inside the gut were a number of eggs from parasitic nematode worms - whipworm and maw worm, although it was not possible to suggest the severity of Lindow Man's parasite infestation.

The bulk of the chapters in the book are concise, separate reports which, although they do refer to one another, are not strongly linked together. They vary a great deal in their breadth of treatment. Some are general descriptions or surveys of literature whilst others are attempts to answer very specific questions. Several suggest that they are the results of preliminary investigations only and it is clear that work on Lindow Man will continue. One way in which the book will make its mark is that it establishes techniques which will be very useful in future. If another bog body is found, it should be much easier to plan its investigation as a result.

Whilst *Lindow Man* is very much a technical report, not really written for the general reader, *The Bog Man* is very much the opposite. It is an account of the Lindow Man project in non-technical terms, which places it in the context of other finds, explains techniques and has many illustrations. The findings are organised into six chapters, much along the lines of sections in the *Lindow Man* book, but each summarises the complex evidence and draws on comparative material from other bog bodies, mummies and so on. There is a chapter on the discovery, excavation and conservation, one on the forensic aspects, another on the reconstruction of Lindow Man in life, and others on the pathological investigation, environmental context and examination of the gut contents. A seventh chapter puts Lindow Man into context by describing a wide selection of preserved ancient bodies from all corners of the world. It deals with other European bog bodies, remains from the frozen tombs of the Altai mountains in southern Siberia, naturally freeze-dried bodies from Greenland, Egyptian mummies and the remarkably preserved bodies of Chinese nobility, as well as the mummies of the New World, from the Aleutian Islands to the Andes. *The Bog Man* is a useful introduction for the non-specialist reader. The Lindow Man find has aroused a great deal of public interest and the book will no doubt attract a wide readership.

SIMON W. HILLSON

CUNLIFFE, B. *Danebury: an Iron Age hillfort in Hampshire*. Vol. 1. *The excavations, 1969-1978: the site*. Vol. 2. *The excavations, 1969-1978: the finds* (CBA Research Report 52). Nottingham, Council for British Archaeology, 1984. vii + 199 pp., 135 illus., 56 pls., 7 microfiches (Vol. 1); ix + 337 pp., 224 illus., 10 microfiches (Vol. 2). £40.00.

CUNLIFFE, B. *Danebury: Anatomy of an Iron Age Hillfort*. London, Batsford, 1983 (hardback), 1986 (paperback). 192 pp., 100 illus. & £14.95 (hardback), £9.95 (paperback).

These publications provide two accounts of the first stage of Cunliffe's Danebury project (1969-1978). Excavation has continued at Danebury since 1978 and some later results are included, notably the plan of additional areas cleared in the west of the site, but detailed discussion refers to the work completed by 1978. The CBA publication represents in Cunliffe's own words 'the definitive report of the first ten years' work'; the Batsford volume summarises this work for a wider audience. Each publication, in its different way, represents a major achievement in communication.

The Danebury excavations constitute one of the main field projects to take place in Britain since Wheeler's campaigns of the 1930's. Cunliffe sees the intervening period as one which produced many major problems, but answered few, and he sets the stage thus for the late 1960's: 'It was extremely difficult to move on to more interesting topics like social structure, population dynamics and political change. We had come to a threshold of knowledge beyond which were only fairy stories of what might have been'. It appeared that large scale area excavation inside a Wessex hillfort would break the impasse: 'But in the large-scale excavations that were just beginning, and the designing of broadly based research strategies for gathering data, lay the hope of being able to cross that threshold. It was against this background that the excavation of Danebury was planned'.

The results which Cunliffe is able to present significantly advance Iron Age studies in Britain and a whole body of fresh evidence has been made available promptly and clearly. Certain categories of finds are especially revealing, notably the plant and animal remains and ironwork, and some specialist reports represent major pieces of research in themselves: Martin Jones on plants, Annie Grant on animal husbandry, Clive Orton on statistical aspects of radio-carbon dating, to cite just three of the skilled band of collaborators that Cunliffe managed to enrol. The relatively abundant human remains too, dealt with by Bari Hooper, represent an important and surprising series of finds which must take a preponderant role in relating Iron Age Wessex to a broader Iron Age context.

But Danebury is of interest beyond the confines of the Iron Age since it represents a serious attempt to tackle a large scale

excavation using state of the art techniques of investigation, recording and interpretation. As such, Danebury may serve as a commentary on the effectiveness of current approaches to solve problems of social structure and dynamics, as Cunliffe spelled them out.

Cunliffe himself makes the point that archaeology has developed greatly during the life of the Danebury project and that his own methods and approach have changed since the first Danebury campaigns were designed. Indeed, it was only by experimenting with a project on this scale that problems of procedure would be distinguished and tackled. The most resistant problem that has come to the fore is the general one of the difficulty of dealing with large quantities of prehistoric data that do not lend themselves to the kind of mechanical classification that may serve later, industrial remains. If the function of features and areas of a site and so of the site as a whole are to be understood in detail, contemporaneity or near contemporaneity of related features must be established, but this requires study of fragmented and refitted material (for the Iron Age pottery) and the working out of relative chronologies at a level of detail that is likely to appear taxing for any large scale excavation.

Certainly, the experiment at Danebury has demonstrated the need for such detailed studies, and the inability of radiocarbon dating to provide an adequate substitute for a carefully engineered archaeological chronology based on stratigraphy, refitting and seriation (of stylistic as distinct from functional or technological traits; ie. for pottery, decoration rather than fabric). A further myth laid to rest by demonstration is the widespread belief that comprehensive evidence from prehistoric settlements is more readily translatable into social structure than evidence from prehistoric cemeteries.

Like Maiden Castle, Danebury has raised many problems for future resolution, but at a level of detail that was unimaginable in Britain in the 1930's. One such key problem that could only be raised by meticulous and comprehensive research involves the evidence for subsistence: both floral and faunal assemblages are shown to remain virtually constant over the whole life of the settlement, perhaps for half a millennium, and yet this is a time when demographic and commercial changes are thought to have taken place

on a large scale.

The Danebury project may already be perceived as a magnificent achievement and it is certain to be regarded in the history of British field archaeology as a landmark for this generation as Maiden Castle was for the last. These reviewed volumes provide a fitting commentary on this significant enterprise.

F. ROY HODSON

STEAD, I. M. and RIGBY, Valery. *Baldock: the excavation of a Roman and pre-Roman settlement, 1968-1972* (Britannia Monograph Series, no. 7). London, produced for the Society for the Promotion of Roman Studies by Alan Sutton, 1986. 435 pp., 160 figs., 55 tables. £23.00 (incl. postage).

Baldock should go down in the publishing history of archaeology as a *cause célèbre*. Like many such cases it may be that posterity will regard it simply as a good site report and wonder why it should be subject of particular remark. The reason, which needs putting on record, is that it marked the turning point of the battle against the senseless use of microfiche and the victory of communication over bureaucratic policy.

The years between 1968 and 1972 marked a period of house building and infilling at Baldock in Hertfordshire and the area under threat had previously turned up a number of Iron Age and Roman burials and other remains. This was not a well known walled town of Roman Britain but an area of pre-Roman settlement which continued as a 'small town' into and through the Roman period. Structures on the site were mostly in the form of pits, gullies and ditches, there were no complete stone buildings and certainly no mosaics or sheets of painted wall plaster; in one way this was one of the best reasons for the extensive and lengthy excavations, for we know so little in detail about such sites. In the final report the site and

structures take up 50 pages, the burials 30 pages, miscellaneous finds about 107 pages, and the pottery nearly 200 pages.

If, as was suggested, the publication guidelines had been followed, the ditches and pits, obviously far less important than mosaics and town walls, could be summarised in 40 pages or so, and then if the whole site could be compressed into that small compass the pottery could be tucked away in microfiche and the whole thing could slip almost unnoticed into a county journal. This was to reckon without an excellent excavator, with inside knowledge of the corridors of archaeological power, and an equally excellent pottery specialist who had made of the pottery report something much more than might be expected from such a site. They fought, and this publication shows that they won, and that it was worth winning. Ian Stead's site report is clear and an excellent summary of the sequence on the site. Val Rigby's pottery report is very good indeed and will form a sound basis for other people's work, especially on the first century AD.

Publication guidelines are made for the mediocre norm and so long as they are used sensibly on the nondescript they can cause little harm. But excellence is a rule to itself; Val Rigby's pottery report is excellent; thank goodness it has been well published and the little grey men on committees have for once bitten the dust.

RICHARD REECE

MILES, David (ed.). *Archaeology at Barton Court Farm, Abingdon, Oxon.* (Oxford Archaeological Reports, 3; CBA Research Report, 50). Oxford, published by the Oxford Archaeological Unit for the Council for British Archaeology, 1986. xiv + 66 pp., 33 figs. Microfiches in pockets. £19.75.

After being run out of Baldock (see review above), the little grey men seem to have roosted in Barton Court Farm. But it would

be unfair to let the mechanics of publication count too heavily against David Miles and the Oxford Unit, so I will relegate a horror of the text provided to a material polemical coda.

In 66 pages - including bibliography but excluding 4 introductory pages spread over 8 sides - we are given an introduction to, and summary of, 631 frames on 9 microfiches which contain the full excavation report. 'It is hoped (p.xii) that by publishing in this way we can provide detailed information as cheaply and flexibly as possible'. Grrrrr... Down boy, down. Microfiche 1 is the 'printed element', i.e. a microfiche of the printed book. A pity the book goes viii, ix, x, while the microfiche has viii, x, xi. Fiche 2 has 14 frames on, fiche 6, 21. In the printed text we are given the geographical and archaeological background (1-3), the site (4-19), landscape and resources (20-26), nuclei of ancient farming (27-37), towards a model of the villa estate by Martin Jones (38-42), communications, prosperity and trade (43-48), and change and continuity (49-54).

The site consisted of an Iron Age farmstead of the 1st century BC - 1st century AD, and a group of wooden buildings of the 5th-6th century. We are well guided through these remains and it would have needed only ten further carefully chosen printed pages to give us the basic evidence on which the dating depends. If the report was to be published cheaply and quickly that could have made an interesting 25-page (HBMC subsidised) article which would have been fully accessible in a local or national journal. One point here which does need further thought is the added cellar with the tessellated floor; I find it very difficult to believe that this was built for food storage. 'Nuclei' is interesting but diffuse and the same can be said for 'Communication and trade'. My worries centre on the large number of wide statements which are not backed up in microfiche, but describe a wide area over a long time with only the occasional reference. Martin Jones on the villa estate is useful so long as his map is disregarded and his acreages are understood as 'land, not necessarily in blocks but somewhere around, and within reach of, the farm'. 'Change and Continuity' is presumably the reason for making this report a full-scale book, for few sites show establishments from Iron Age to Saxon, but this chapter suffers badly from a failure to grow out of the hard

facts which ought to have been its base so that it reads like a selection of beautiful thoughts based on a very odd selection of random references. I hope future generations will find it odd to refer to the Belgic 'invasion' as an 'archaeological cliché' (p.49), while 'Saxon settlers' roam through the pages unopposed.

Some, but not all, of these criticisms grow from the divorce of the printed beautiful thoughts from the hard fact of microfiche. This did not happen at Baldock (see above); need it have happened at BCF? In the Baldock report the Roman Society provided 435 printed pages for £12.00, about 2.76p per page. BCF complete takes up 631 frames of microfiche. When 66 pages were printed by the CBA and added to the 9 microfiches the cost was £19.75. If all the 631 pages had been printed by *Britannia* monographs instead of being microfiched it must be assumed that the cost would have been 631 x 2.76p, or just under £17.50. Is overcharging by £2.25 for the inconvenience of microfiche *really* providing 'detailed information as cheaply and flexibly as possible'??

RICHARD REECE

IRELAND, S. *Roman Britain: a sourcebook*. Beckenham, Croom Helm, 1986. 266 pp., illus. £18.95 hardback; £9.95 paperback.

For those who teach courses on Roman Britain, or as students require easy access to source material alluded to in the mainstream textbooks, this handy compendium, encompassing literary, epigraphic and numismatic material, will be especially welcome. This is in effect a companion to the invaluable (but here unmentioned) collection by R. W. Moore, *The Roman in Britain: A Selection of Latin Texts* (3rd ed., 1954). After an introductory chapter which firmly warns the reader against too uncritical an acceptance of what are often chance survivals of evidence, sections deal with the geography and peoples of Britain, the political and

military history from the time of Caesar to 'the groans of the Britons', religion (including Christianity), commerce, local government, and family life. There is a short bibliography, and useful indexes. Over 500 items are featured, some well known, others less so. We learn not merely about victories and conspiracies but also about British hunting dogs and hangover-inducing local beers. Inscriptions on stones and coins take their place alongside lead curse-tablets, oculists' stamps and graffiti; the British section of the *Notitia Dignitatum* makes a welcome appearance.

There is no space here to object to the inclusion or exclusion of particular items, or query the translations themselves. The editor is more at home with literary than with epigraphic texts, which are often accorded a more precise significance than their content warrants (eg. nos. 101, 111, 113). The deliberate decision to exclude Caesar's own account of his expedition to Britain, and Tacitus' version of Agricola's life, career and campaigns, in favour of derivative accounts and other less familiar material may not be accepted by readers who are forced to look elsewhere for some major texts they could have expected to encounter here. Perhaps if a second edition is proposed, Agricola could receive more of his due, space being found (for example) by reducing the section on Druids (much of which is, strictly speaking, unrelated to Britain). Note also that one inscription appears twice (nos. 132, 296) with slightly differing translations offered; the texts of 136 and 137 are identical. It is strange that the author retains the now discredited titulature of Cogidubnus, as *rex et legatus Augusti in Britannia* (no. 444), a titulature which is later used (p.227) to suggest senatorial rank for Britain's favourite client king. In general the presentation is clear. However, it is hard sometimes to distinguish between the texts themselves and the author's explanatory remarks, especially when a page is turned; the latter might have gone into italics and been merged with the footnotes which are irritatingly appended to each chapter. Often it is unclear whether an item is on stone, lead or pottery; or whether the original Greek or Latin text was prose or poetry. Sometimes the provenance of an inscription, eg. Castlehill (nos. 136, 137, 357), Treacastle Hill (no. 203), or Bollihope Common (no. 382) will mean little to the reader seeking a geographical context for the document. It is easy to cavil.

Better to applaud this helpful collection, which will find a home on many bookshelves, yet be unlikely to gather much dust there.

LAWRENCE KEPPIE

FENTON, Alexander and STELL, George (eds.). *Loads and roads in Scotland and beyond: road transport over 6000 years*. Edinburgh, John Donald, 1984. vii + 144 pp., 61 figs. £8.50.

Routes of communication must surely lie at the heart of the growth and development of every society and, as Professor Coles points out, the character and extent of a country's roads provide a mirror of its organisation and its central control - or lack of it. Because of the inherent problems these routes are rarely studied by the archaeologist. Instead there is a temptation to draw lines on maps between the known sites and artefact distributions with scant regard for the practical aspects involved.

Loads and roads in Scotland and beyond was originally presented to a one day conference at the Society of Antiquaries of Scotland. The 'and beyond' refers in particular to Professor Coles' work on the Somerset Levels and to ethnographic evidence in both of Alexander Fenton's valuable contributions. The papers cover problems concerning the identification and dating of communication routes and take into account the initial stimuli - social, economic or military. Questions are also raised involving the levels of technology displayed, not only of the constructions themselves but of the traffic which was subsequently to use them. The historian, geographer, student of place names, engineer and archaeologist can all contribute but unfortunately few of the individual papers use more than two of these sources.

As with many published conference proceedings, while each paper is stimulating and adds much to this little-studied topic, the overall impression is one of lack of

cohesion. This problem does not arise at the initial presentation and there is a case for stronger editorial control at the publication stage. It is at this point that details of specific sites and NGR's could be added to great advantage. The only author to provide the latter is Gordon Maxwell in his succinctly written account of the evidence from the Roman period.

The book is published by John Donald and is one of the successful *Scottish History and Culture Paperback* series which covers many lesser known subjects and is available at relatively low cost.

JUDITH HARRIS

ROYAL COMMISSION ON ANCIENT AND HISTORIC MONUMENTS IN WALES. *Inventory of the ancient monuments in Glamorgan I: Pre-Norman. Part II The Iron Age and the Roman occupation*. Cardiff, HMSO, 1976. xx + 135 pp., 61 figs., 14 pls. £9.50.

This book, in the new-style format of period-based county publications, contains a great deal of useful information. As with all RCHM volumes, the quality of the illustrations is high, the individual site entries are detailed and now use metric measurements. The distribution maps with the coloured physical background are extremely useful. New features include arrangement by monument type rather than parish, and omission of isolated finds. The staff and their responsibilities are outlined (p.xvi), a great advance which gives credit to the Royal Commission investigating staff who for so long have had to be anonymous in their writings for the inventories.

Glamorgan has received considerable attention from excavators in the past, and this has provided a useful dating framework for many categories of site. The area is particularly fortunate in the Welsh context because it is ceramic in the Iron Age and relatively rich in material culture in the Roman period. This is, after all, the only

part of Wales with a group of villas, some of them quite magnificent.

The small non-defensive enclosed settlements have generally been assigned to the Iron Age section, although no doubt many belong also to the Roman period. Continuity of settlement beyond the conquest may be common in this area since many sites, promontory forts for example, produce Roman pottery. Without more extensive modern excavations, it is not clear whether this represents continuous use or just re-occupation. The researcher interested in the Iron Age would be advised to check through the Roman settlements, and vice versa because of the difficulty in allocating sites to one chapter or another.

Presumably many more small enclosures will be found through aerial photography, and so this part of the book will no doubt quickly become out of date. For more substantial forts, the listings will long have reference value. The discussion sections highlight the most important features of the Glamorgan sites and offer some interpretation; the data offer far greater potential than has been exploited here, and it is hoped that this will be seized by the Commission staff in other works, and by others. All those interested in the periods, and the interaction between Roman and native will find this an extremely useful volume, and all libraries should purchase it. The new format is a welcome advance, and places the book within the reach of period-based specialists.

HAROLD MYTUM

FENTON, Alexander. *The shape of the past: essays in Scottish ethnology* (Scottish history and culture paperbacks). 2 vols. Edinburgh, John Donald, 1985-6. viii + 191 pp., 45 figs.; vii + 184 pp., 57 figs. £12.10; £12.00.

Ethnographic data for western Europe is very poor compared with other parts of the world, and prehistorians working in Britain

have often felt able to neglect such data as can be found, or use models from other parts of the world with very different environmental conditions from Western Europe. Fenton has written a series of papers which make a contribution to filling this gap.

These two volumes contain papers written over the last 20 years, many originally published in ethnographic journals from East Europe not readily available here. Five papers in Volume 1 are on theoretical aspects of regional ethnology; the remainder in Volume 1 and those in Volume 2 are concerned with ethnological evidence of material culture. Though many of the papers relate directly to Scottish experience, they are of general relevance to pre-industrial life in western Europe.

In the first book there are papers on house building styles, the use of cattle dung as fuel and the tools and methods of reaping and threshing. The second volume has only six papers: on yoke types, draught oxen, manuring with seaweed, paring and burning, and two on the use of turf and peat for fuel. Descriptions of farming processes such as these contribute to the building of theories about early agricultural practices in temperate Europe. They are a reminder that practices such as the use of seaweed for manure or of dung for fuel may have been locally important for successful agriculture. The descriptions of crop processing methods raise interesting questions about the origin of charred plant remains on archaeological sites and may be valuable for the understanding of site formation, especially as recent ethnographic work in this field has been done mainly in the Eastern Mediterranean.

Where Fenton is not recording his own observations of surviving practices, he uses early historical accounts. In parts of Scotland these are often no earlier than the Old and the New Statistical Accounts of each parish, which were compiled at the end of the eighteenth century. They depict societies already very different from prehistoric and early historic times: the potato was by then an important crop, and animal husbandry was geared to supplying the urban markets of England and Scotland. Though ethnographers, like historians, have sometimes been inclined to assume that the earliest written account of an activity describes an earlier unvarying practice, Fenton mostly avoids this assumption. He is familiar with, and uses, some of the archaeological evidence, parti-

cularly for the Viking world. Not only those concerned with early farming in western Europe but any archaeologist working on prehistoric British sites will find something of value in these papers.

DALE SERJEANTSON

HARVEY, Nigel. *Historic farm buildings study: sources of information*. London, Ministry of Agriculture, Fisheries and Food, 1985. vii + 76 pp. Spiral binding. £5.00.

This booklet has been produced by the Ministry of Agriculture, Food and Fisheries principally for the use of its own staff who may be called upon to advise on the re-use of historic farm buildings. The booklet begins with an introduction to the development of Historic Farm Buildings studies and the importance of their sympathetic conservation.

An Historic Farm Building is defined as a farm building along with its ancillary machinery but excludes farm houses, mills, commercial buildings and tithe barns. A date limit at the turn of this century has been imposed for buildings in this study.

The sources of information are directed at the recording and study of individual farm buildings rather than the whole farm complex. This approach is not only restricted to Historic Farm Buildings and still needs to be satisfactorily resolved in relation to the recording of all monuments in their historical and topographical context.

The scope for the study of Historic Farm Buildings is enormous; it is estimated that there are at least 600,000 in England and Wales alone. The majority of these buildings still earn their living as they comprise about one quarter of the farm building stock.

The earliest surviving structures tend to be barns built prior to the middle of the 18th century - of which there are 15-20,000. Few other types of structures survive prior to this date. After the middle of the 18th

century an increasingly wide range of structures are found to survive.

The booklet provides lists of the relevant national bodies with an interest in Historic Farm Buildings. It also catalogues national and local surveys of Historic Farm Buildings. Published sources are listed as well as less easily available material contained in theses and locally published booklets. A useful introductory reading list has also been provided.

It is unfortunate that this booklet was not produced with a more substantial binding, as it will remain an invaluable source for anyone engaged in the study or conservation of Historic Farm Buildings. It should also have a wider appeal to all those involved in the study of all aspects of post-medieval agriculture. The publication comes at a time when government prompted diversification in the countryside may see Historic Farm Buildings being viewed as a tourist resource rather than a liability as they often have been in the past.

W. D. COCROFT

MITCHELL, Stephen (ed.). *Armies and frontiers in Roman and Byzantine Anatolia: Proceedings of a colloquium held at University College, Swansea, in April 1981* (British Institute of Archaeology at Ankara Monograph 5) (BAR Int. Ser. 156). Oxford, British Archaeological Reports, 1983. iv + 378 pp., 22 figs., 39 plates. £16.00.

This volume is the result of a colloquium held in Swansea in 1981 that was intended to supplement discussion of the eastern frontiers which had been poorly represented at the series of Limeskongressen. Such was the success of the Swansea colloquium that a second was held at Sheffield in 1986 under the title 'The Defence of the Roman and Byzantine East' (BAR S 297), whilst a third is now in planning.

Anatolia has been kind to the archaeologist in the number of Roman and Byzantine remains, kind also to the historian for the wealth of documentation. The seventeen papers here bring us up to date with new discussions on well known problems as well as presenting us with new chapters in our knowledge through recent discoveries. Speidel's paper opens the way by noting the enormity of epigraphic data from Anatolia and the plethora of studies that can arise from it. Indeed, such is this wealth that many papers here take their cue from recently discovered or newly interpreted inscriptions. Numismatic documentation is also discussed by Howgego. As is to be expected, historical geography looms large amongst the papers. An examination of ancient sources, modern travellers' accounts and discoveries combine to form the topics in a number of papers: Syme - a delightful discussion of a problem in Strabo; French, Lightfoot, Whitby, Howard-Johnston, and Saunders on a little known period in the history of Qalat Seman. There are a number of interesting historical papers: Mitchell on the impact of military economy in the area; Kettenhofen on the campaigns of Gordian III; an interesting paper by Hopwood on local policing; and Arvites on campaigns in the late eighth century. As noted by Mitchell in his introduction, archaeological evidence is not so well represented but there is an engaging account by Wagner on recent work in Osrhoenae. Participants at the colloquium will remember the fine photographic exhibition presented by Saunders and Sinclair; in his paper Sinclair relates this documentation to a discussion of some major architectural remains. A synthesis of archaeological and historical information is presented by Wagner through bringing our attention to the fine series of maps produced by the University of Tübingen.

However, throughout the volume the emphasis has been on groundwork in Anatolia. Such is the range of the papers here, and their full notation, that the interested student will find some excitement in almost every aspect of Roman and Byzantine Anatolia.

JULIAN BOWSHER

ZVELEBIL, M. *From forager to farmer in the Boreal Zone: reconstructing economic patterns through catchment analysis in prehistoric Finland* (BAR Int. Ser. 115). 2 vols. Oxford, British Archaeological Reports, 1981. 472 pp., figs., maps. £20.00.

The transition from a hunting-fishing to a farming economy has been an issue of long-standing interest for archaeological research in Northern Europe. In a strict and narrow sense it involves a change from relying upon the food resources available in northern habitats to producing food through stock-rearing and grain-cultivation of species which by and large are alien to the northern environment. That such a change was far from being an abrupt episode but involved a gradual, long-term adaptation consisting of intermediate stages, is generally well documented in archaeological record. But in a broader sense the transition from hunting and fishing to farming was more than a simple substitution of one economic strategy by another - it involved the radical transformation of a society's mode of living. Economic transformation was inextricably connected with a profound change in the technological, ritual, social and organisational structure of society. The order in which these changes occurred is still imperfectly understood.

From this perspective let us then consider the contribution of Zvelebil's book. The geographical area which forms the basis of his study covers south-west Finland (mainly the Kokemaenjoki basin) and is broadened, in the final chapter, to cover the whole of the north-east Baltic region. Archaeological evidence from the area spanning four millennia (4000-0 bc) is briefly outlined as well as the environmental changes which took place over the same period.

Due to the unfortunate combination of poor preservation conditions and a paucity of excavation, Zvelebil has very little actual faunal and floral data on which to base the main objective of his research - the analysis of economic change from c.4000 bc to 0 bc. Thus he has to resort to information obtained through the site catchment analysis. This involves detailed information on the environment potential of 44 settlement sites which between them cover the Combed Ware, Corded Ware, Kiukais and Bronze Age

groups. All information is clearly tabulated and presented in an appendix (App. 4) - which appears in a separate volume, greatly facilitating references between text and figures. This is an invaluable source of information against which future evidence can be compared and it will serve as a solid foundation for years to come.

The conclusions of Zvelebil's analysis are, however, controversial. Some of the patterns implied by the archaeological evidence - such as the use of coastal settlements in the summer and inland sites in the winter by the hunting-fishing Combed Ware and Jakarla groups - are plainly contradicted by the catchment analysis which suggests precisely the opposite. While Zvelebil argues that this problem cannot be solved without additional evidence, one has the impression that he is tacitly in favour of the latter.

The general economic change is seen in two main stages: the first stage (c.2800-2000 bc) involves an increase in specialisation in marine resources, predominantly seal hunting. This is seen as a direct result of increased population pressure along the coast, further manifested by increased mobility of the inland Corded Ware groups. The second stage (c.1300-500 bc) involves a further growth in population pressure and a depletion of the seal as a stable food resource, leading to the gradual - and, one feels, unwilling - adoption of a mixed farming economy during the Bronze Age.

While this view is in contrast with the opinions of many Northern scholars, our main criticism must surely rest upon the fact that Zvelebil's interpretation is based not on the analysis of archaeological evidence from different settlement sites but on their economic potential - the two surely cannot be thought of as synonymous. According to Zvelebil's argument the migrant farming/pastoral (in the traditional view) communities of the Corded Ware/Battle Axe complex appear to have made no contribution to the economic change; the social and organisational implications of this migrant movement into the south-east Baltic are not even considered.

Thus a momentous change in North European prehistory is presented in this book entirely in the context of environmental determinism; more specifically only one factor is seen to have induced this change - a depletion in the seal population. This is a narrow interpretation and it will undoubtedly

be tested against future evidence. It contrasts with the broader perception evident in much of this work which, in spite of these drawbacks, is an important contribution towards a broader understanding of the archaeological problems in Northern Europe.

MADGALENA S. MIDGLEY

BARKER, Graeme. *Prehistoric Farming in Europe* (New Studies in Archaeology). Cambridge University Press, 1985. xviii + 327 pp., 100 figs. £27.50 hardback; £9.95 paperback.

This book starts with two chapters in which the sources of evidence for early European farming and the resources and constraints within which it operated are set out. Europe is then dealt with in seven regions: the Mediterranean, the Balkans with the middle Danube and the Ukraine, the Alpine region, the continental lowlands, Atlantic Europe, Britain with Ireland, and Scandinavia with the eastern Baltic. After a summary of the climatic and soil conditions which governed the possibilities for farming, the account of each region covers mesolithic subsistence strategies, the evidence for early farming, and developments in husbandry up to the beginning of the Christian era. In a final chapter the notion of 'land-hungry colonists' spreading into Europe is rejected in favour of the adoption of farming by the indigenous population; and its intermittent spread is emphasised.

The author writes with a nice awareness of the nature of early farming, a perspective often lacking from conventional textbooks on prehistory. In a book of this scope, it is perhaps inevitable that he has sometimes accepted other workers' conclusions, as well as their data, without critical discussion. However, the great strength of the book is that it contains more detailed information than either of the other two books on farming in prehistoric Europe which have appeared in the last few years: the third volume of the Research Project in the Early History of

Agriculture *Early European Agriculture* and Dennell's *European Economic Prehistory*. Though these latter sometimes contain greater insights into prehistoric subsistence, *Prehistoric Farming in Europe* is probably of greater value to archaeologists and students.

DALE SERJEANTSON

JAŹDŹEWSKI, Konrad. *Urgeschichte Mitteleuropas*. Wrocław, Zakład Narodowy im. Ossolińskich, 1984. 528 pp., illus. No price set.

Professor Konrad Jażdżewski died in April 1985. It's perhaps appropriate that, in the last of a long series of over three hundred publications, this most distinguished Polish scholar should present his very personal vision of Central European prehistory. With the ever-deepening, and seemingly inevitable, specialisation among archaeologists, the all-embracing work of this kind has become a rare species. When undertaken, such a work often reveals the author's shortcomings in fields outside his own speciality; but this is not the case with the present volume.

The Central Europe of Jażdżewski's study is, as he himself observes, an arbitrarily delineated region of 1200 x 900 km, based largely upon modern political divisions but modified where necessary by geographical considerations. The work covers an immense time-span: from the appearance of the earliest hominids and/or the implements recognised as their products - sometime during the Günz-Mindel interstadial - to the formation of the medieval states (XII/XIII century AD) when the last vestiges of prehistoric communities, as exemplified by the Baltic Slavs, finally enter a fully historical period. Such an extended chronological framework may appear somewhat unorthodox to Western archaeologists, for whom prehistory generally ends with the expansion of the Roman empire. But it represents a commonly accepted chronology among Eastern scholars for whom the medieval (or at any rate early medieval) period forms a natural continuity in the economic, cultural and

socio-political developments in which archaeological and historical data tend to be used in supplement rather than in opposition.

Although throughout the discussion there is a certain encyclopedic quality to this book - at least in the sheer range of material covered - the reader never gets the impression that all the available data have been 'crammed in'. On the contrary, one is constantly aware of a conscious selection of material, carefully chosen to support a specific point of view or to pursue a particular theme.

The main part of the book follows a sound traditional chronological framework beginning with the Palaeolithic (chapter III) through to the Iron Age, the latter being extended, as already noted, to the XII/XIII century AD (chapter VII). Within each of the major chronological units we are first offered a general commentary based upon the relevant climatic, environmental and anthropological data. Then follows a discussion of the archaeological material which reveals a well-balanced descriptive and interpretative approach. Although naturally the emphasis upon particular themes varies from chapter to chapter, there is nevertheless a prevailing pattern to a discussion. Jażdżewski covers themes such as settlement, economy, material equipment (ceramics, flint, stone or metal industries), burial and other rituals, social organisation and - in the later prehistoric period - political and ethnic issues. The latter in particular are treated with judicious authority - especially the vexed question of the relationship between the Germanic and Slavonic tribes.

While no-one would doubt Jażdżewski's authority in matters of Central European archaeology, the quality of his scholarship is revealed even more clearly when he moves into fields obviously outside his immediate, already wide-ranging interests. Events on the periphery of Jażdżewski's Central Europe are not discussed in detail but he fully appreciates that these played a considerable role in the shaping of the cultural, social, economic and, later, political developments in Central Europe. We are therefore offered, in frequent digressions, a broad background which extends to Africa and Asia in the early stages. It takes in the Near East, the Balkans and the North Pontic regions during the consolidation of farming economies, and it shows the impact of the Aegean

during the Bronze Age and reveals what in the Iron Age was absorbed from the Greeks, Celts, Scythians and Romans as well as from the Turco-Tartar nomads in the south-east or expansionist Scandinavians in the north. It is this broad vision of events, in which Jażdżewski's discourse is as informed and eloquent as it is in matters closer to home, that makes *Urgeschichte Mitteleuropas* such a valuable book. It should become standard reading for anyone who wishes to gain an understanding of European prehistory.

The reader who wishes to use this book merely for quick reference is assisted by margin entries which identify in more detail individual themes discussed within each chapter. The book is also useful for its illustrations. Numerous maps, small but clear, illustrate the shifting centres of activity. The 197 illustrations are of high quality but tend to be biased towards the representation of artefacts. The inclusion of a few more site plans as well as more detailed chronological tables (note the use of radiocarbon and calibrated dates throughout!) might have improved this aspect of the book.

References in the text are few and far between and, when they do appear, it is mostly as numbers referring to positions in the bibliography. This is a serious shortcoming from the point of view of the reader who may wish to pursue a certain point or idea or trace some information to its original source. On the other hand it must be said how much more pleasant it is to read a text where the flow of words is not constantly interrupted by brackets and reference entries. The selected bibliography contains over 280 titles. General works are arranged by country, while more specific references are arranged chronologically following the order of the chapters. There are also separate sections covering such topics as linguistics, theory and methodology, geology, geography and anthropology. While an index is a regular feature of most British and West European publications, East European books frequently do not have this useful item. It is therefore pleasantly surprising to find that Jażdżewski's book is accompanied by two indexes: one of persons' names, the other of geographical and cultural names.

Last, but not least, how many of us could write a book that will not only please from an archaeological point of view, but will also inspire linguistically? This reviewer has read two versions of this work -

the original, longer Polish edition as well as this shorter, German version written by Jażdżewski himself. Both impress with their eloquence and their command of language. This work is a superb achievement by a prehistorian whose scholarly approach and personality have impressed themselves on European archaeology for over half a century.

MADGALENA S. MIDGLEY

TORRENCE, Robin. *Production and exchange of stone tools: prehistoric obsidian in the Aegean* (New studies in archaeology). Cambridge, Cambridge University Press, 1986. xiii + 256 pp., 56 figs., 35 tables. £27.50.

The title of Robin Torrence's masterly reworking of her doctoral thesis belies its breadth and significance. The study extends beyond the Aegean to the world in a conspectus of lithic raw material procurement and exchange in both prehistoric and ethnographic contexts.

A valuable review of recent analyses of exchange processes serves as a prelude to one of the cornerstones of the work. Proceeding from the premise that the more profit-oriented an exchange system is the more efficient production within it will be, Dr Torrence describes various means by which efficiency might be achieved in lithic procurement and reduction; defines their probable archaeological expression; and examines their incidence among modern and recent stone-quarriers and workers. The level of correlation between some of the measures of efficiency and the social and commercial contexts in which the practitioners operate(d) is impressive.

The theoretical framework so established is used to examine the Neolithic and Bronze Age obsidian quarries of Sta Nychia and Demengaki on the island of Melos, and the distribution of their products. In addition to applying her criteria of efficiency, Dr Torrence assesses the annual person-hours

likely to have been expended at the quarries, and examines the occurrence of material from them in settlement contexts elsewhere in the region.

The results repay what must, despite a carefully designed sampling strategy, have been a vast input of her own labour. The density and nature of waste at the quarries seems, when viewed in the perspective of the many centuries during which they were worked, to represent an expenditure of no more than 133 person-days per year for both. Unsystematic extraction, lack of a specialised tool-kit, low levels of standardisation in working methods and in debitage, low estimated annual production of macrocores (the main product), and evidence for the export of unmodified nodules all point to unorganised, non-commercial exploitation. Direct access by obsidian-users to the sources is inferred. The conclusion is supported by examination of industries from settlement sites elsewhere in the Aegean, which show little fall-off in flake size with distance from the quarries, suggesting that much of the material was collected at little marginal cost, perhaps in the course of fishing expeditions.

These conclusions weigh heavily against traditional views of the exploitation of Melian obsidian as a major commercial undertaking, which contributed to the development and prosperity of the city of Phylakopi.

A possible misgiving is that the ethnographic record, one of the foundations of Dr Torrence's approach, is irremediably flawed and fragmentary. Adequate anthropological and technological accounts exist for only a handful of stone-working societies out of what was once a whole world-full. If more of them were better documented, would the present correlations between society, economy and technology still obtain?

Whether they would or not, Dr Torrence has driven home the practical point, all too often forgotten, that the superficially vast bulk of debitage which characterises mine, quarry and workshop sites can actually be generated at relatively little cost in time and labour. The temptation to infer commerce, even industry, from bulk alone has to be resisted. *How* the material was worked is at least as important as *how much* of it was worked. On the general level Dr Torrence has provided a model of the construction of theory appropriate to the data and of its

realistic application, and has demonstrated the need to view lithic procurement and distribution in their complete human context rather than as a specialised aside to settlement archaeology. She has made us put down the calipers and think.

FRANCES HEALY

PREZIOSI, Donald. *Minoan Architectural Design: Formation and Signification* (Approaches to Semiotics 63). Berlin, New York, Amsterdam, Mouton Publishers, 1983. xxxi + 522 pp., numerous plans and tables. £39.95.

This maddening but important book stems from a Harvard Thesis of 1968 on Minoan Palace Planning and its Origins. It is maddening for the jargon and convoluted language which make reading and appreciation difficult: 'synecdochal' (of revelations), 'contrastive' and 'connectivity', are among words which bespatter the opening pages. But 'megastructure', although a monstrous hybrid, is admittedly convenient as a non-emotive term for a palace. Arcane and sometimes arrogant pedantry masks profound thought and deep understanding of the principles of Minoan architecture, however, appreciated here as never before. Those who struggle through the maquis of jargon to the account of the Minoan Hall system and the detailed analyses of houses and palaces will be well rewarded.

Preziosi shows how Minoan buildings were planned, and how, while each was different, and symmetry as found in temples and palaces of contemporary Egypt was avoided, the arrangement of their parts followed definite principles even if in a highly flexible manner. Part One: Formal Organization is concerned with this. An Appendix (A) contrasts the underlying principles of Mycenaean architecture, exemplified in Crete by Gournia House H-e and by the complex excavated by the British School in 1913 at Plati in Lasithi. The approach seems right in general; but House H-e at Gournia is not

yet fully excavated, and the remains at Plati, interpreted by Preziosi as those of a LM III palace, look from the published photographs (with their abundant use of dressed stone) to be LM I rather than LM III in date and to belong to several independent buildings: the British excavators assigned them to LM III, but in a very offhand manner, and did not illustrate or even describe a single LM III vase or sherd.

Part II on Modular Organization deals with the way in which Minoan buildings were planned and laid out on the ground before construction. Preziosi makes generous acknowledgement of indebtedness to A. Badawy's parallel work on Egyptian architecture. The basic Minoan unit of measurement seems to have been a 'foot' of c.27 cm; another of c.34 cm in less common use appears to correspond to a widespread family of units of measurement ranging from ancient Sumeria to the Indus Valley in the east and Northern Europe in the west. Both long and short 'foot' were used together in the palace at Knossos and in the later one at Phaistos. Preziosi also claims that some of the early circular tombs of Crete were laid out with the long and others with the short foot. Preziosi emphasises the important role played by religion and ritual in the laying out of the palaces. He cites the work of Scully with approval, and suggests that sunrise on a special day may have been the decisive factor in determining orientation.

The system for laying out a Minoan building involved an original square or rectangle established with the help of diagonals and divided into (or in the case of some larger buildings supplemented with) a grid of equal squares. These were established on the ground with pegs and rope: each had sides consisting of a number of 'foot' units - usually 10, 8, 6 or 5. Preziosi's reconstructions of how specific buildings were laid out are often most convincing. In the palace at Knossos, for instance, his scheme for the West Magazines based upon a 'foot' of c.34 cm is attractive; but the initial square formed from a pair of equal rectangles, one covering the Central Court, the other the west wing apart from the Magazines, ignores the line of the original west facade of the Court, and in general Preziosi avoids the problem of different periods of construction. His idea, several times repeated, that the Vat Room Deposit was a central foundation deposit for the Early Palace is hard to accept, as is the suggestion that double axe signs (masons'

marks) were cut to mark nodes in the original grid layout for the palace: double axes being the commonest sign at Knossos, scattered throughout the palace and occurring in houses and tombs, and dating from many different periods. Preziosi's remarks on the orientation of the palace ignore the fact that the west facade adopts the line of a previous megastructure (to use his term) dating back to EM III. In discussing entrances to the palace Preziosi omits the admittedly hypothetical North-East Postern of Evans.

Some curious ideas might have been eliminated by discussion or closer inspection. One is that the Koulouras in the West Court at Knossos and elsewhere were built as pits for planting trees. The raised square altars in the West Court at Knossos are dismissed as paving; but that originally proclaimed by Evans in the 'Court of the Altar' in the palace is accepted, although it was later recognised as a patch of paving as can be verified on the site today. At the same time original and interesting ideas abound: such as that House B at Tylissos was an annexe joined by a bridge to House A, like the Unexplored Mansion to the Little Palace at Knossos, and perhaps (Preziosi suggests) the Northwest Treasury to the palace there. After Preziosi's demonstration of their key position in the layout of major buildings and palaces it will be difficult to argue that Pillar Crypts were not used for ritual. An intriguing suggestion is that Minoan craftsmen may have worked on the pyramid of Senusret II, leaving a memorial of themselves at Lahun in the form of two unique and un-Egyptian wooden measuring rods.

Preziosi may be right to reject J. W. Graham's Minoan foot of 30.36 cm akin to a foot current in later Greece. He accepts Graham's identification of dining halls at Phaistos and Zakro, but dismisses that over the pillared hall (Teloneion) beyond the North Entrance of the palace at Knossos in favour of one above the Corridor of the Bays/Magazine of the Medallion Pithoi area, although north of the Central Court seems the place for such halls in other palaces. Preziosi appears rather grudging in acknowledgement of the pioneer work of Graham on Minoan architecture, and there is no mention in text or bibliography of J. W. Shaw's classic *Minoan Architecture: Materials and Techniques*, which was published ten years earlier in 1973, nor of G. Cadogan's *Palaces of Minoan Crete* (1976). Misprints are

mostly quite minor, but the figure and title of the plan at Gournia are absent on p.255. The attractive and helpful isometric drawings would have benefited from north signs, which are missing from some of the plans as well.

No criticism, however, should obscure the fact that this is an important and original book which adds a great deal to our understanding of Minoan architecture and of life in Bronze Age Crete in general.

SINCLAIR HOOD

ANDERSON, Anne C. *A Guide to Roman Fine Wares* (Vorda Research Series 1). Highworth, Vorda Publications, 1980. 58 pp., 15 figs. £3.25.

The greatest flaw in this book is its misleading title. Rather than being a general guide to Roman Fine Wares, it is specifically a modest introduction to the fine drinking vessels in colour-coated fabrics produced by the better known industries of the Rhineland, Gaul and Britain. The date range is similarly limited to AD 70-200. The first date was chosen to follow on from Kevin Greene's work at Usk, the second, with less justification, to coincide with the cessation of major importation of samian into Britain.

Within the above restrictions the book gives a handy summary of colour coated beaker forms, each drawn in half scale. The text is pleasantly uncluttered by references, although this clean presentation means that most statements regarding dating, development and distribution have to be accepted at face value, which limits the book's scholastic potential. Although the author did not intend to include analytical information, it must be felt that the 'fabric' definitions are inadequate for field identification, being largely qualitative descriptions of colour and texture. Describing a fabric as being 'rather sandy' is too imprecise to be useful. Already showing its age, the book was written before current controversies arose concerning the correct identification of British colour-

coated beakers, 'Rhenish Ware' and 'North Gaulish Ware'.

JASON MONAGHAN

RENFREW, Colin. *The archaeology of cult: the sanctuary at Phylakopi* (Supplementary volume no. 18). London, published for the British School of Archaeology at Athens by Thames and Hudson, 1985. xiii + 513 pp., illus., 6 pull-out figs., 2 figs. in pocket, 70 pls. £35.00.

The site of Phylakopi on the Cycladic island of Melos was first excavated on behalf of the British School at Athens at the end of the last century and briefly in 1911. In 1974 the site was investigated again under the direction of Professor Colin Renfrew in order to establish a detailed stratigraphic record particularly for the less well understood LBA periods. The discovery of the important sanctuary area and associated finds ensured that work continued at Phylakopi for another three seasons until 1977.

In this, the first of two volumes of reports, the focus is on the two shrines in the sanctuary area, while the second intends taking a wider view of the settlement from the beginning of the Bronze Age. The sanctuary with the famous figure of the 'Lady of Phylakopi' had already before the publication of this comprehensive report achieved a high profile in Bronze Age Aegean studies through a series of publications by Renfrew over the last 9 years or more and assumed a significance not far behind that of the contemporary 'temple' and cult centre at Mycenae.

Chapters 2 and 3 provide exhaustive and clear accounts of the excavation establishing the history of the two shrines in the sanctuary from the construction of the earlier West Shrine in LHIIIA2 to that of the East Shrine in IIIB1 and the abandonment of the area late in IIIC. The chronology, whose micro fine divisions are impressive in a pre-historic context, is based on synchronisms with the pottery of the Argolid and suggests

some 270 years of use for the sanctuary from 1360 to 1090 BC. Chapter 4 discusses the sanctuary stratigraphy in detail and the finds. The sanctuary sequence over three main phases, including a destruction phase in 2b, is complex. But a synopsis on p.7, numerous tables and plans, particularly 4.1 at the back of the book, and the stratigraphic diagrams in Appendix A help considerably. The reports in chapters 2 and 3, when read together with the discussion in Chapter 9, pp.377-84, give a clearer picture of the diachronic history of the area than autopsies ever could. Useful diagrams of the assemblages (except for E and F) show the sequence and location of the finds in and about the shrines until their abandonment in phase 3c when the sanctuary was filled with stones. One consequence of this detailed procedure is that important finds are discussed more than once under various headings. This aptly reinforces the reader's mental picture in the various special reports but can be repetitive in the exegetic chapters of the book.

In Chapter 5 P. A. Mountjoy deals with the pottery and Elizabeth French with the terracotta figures (15 cm and bigger) and figurines from the sanctuary in 6. Her discussion of this Cycladic material in the context of mainland and Cretan traditions of votives is particularly valuable for an understanding of the intricate interrelationship of all three cultures. After an assessment of seal stones in Chapter 7 by John Younger, Renfrew and John Cherry examine the other finds from a scarab (note by Dr T.G.H. James) to the gold 'mask' from the East Shrine, the 'Smiting' figures, a bronze bird and all other objects. The scattered fragments of ostrich shells in the East Shrine are an interesting indication of the nature of the cult there. (The incidence of such gifts including the use of ostrich eggs as cult vessels in the Mediterranean has been collectively discussed most recently by A. Finet, 'L'oeuf d'autruche', *Stud. Paulo Naster II, Orientalia antiqua*, Louvain, 1982, 68-77, and A. Caubet, 'Les oeufs d'autruche au Proche Orient ancien', *RDAC*, 1983, 193-8. R. Laffineur proposes an interesting explanation of their cultic significance, 'Fécundité et Pratiques Funéraires en Égée à l'Âge du Bronze', *1st Int. Conference on Archaeology in the Mediterranean, Malta 1985*, U.P. Malta, 1986, 79-96). In the last two chapters Renfrew presents an overall view of the religious sanctuary in the Melian and then in the wider context of Aegean cult practice as a whole. Some five technical appendices,

bibliography, index and 70 plates complete the volume.

What traces of cult survive from Phylakopi in LBAI are Minoan. (Renfrew does not count the pillar room in the III City (pp.345, 375, 393). This is Rutkowski's view which is no longer universally accepted.) In the sanctuary area there is no firm evidence of earlier cult, although some figurines from there could antedate the shrines (p.262). By the time of the construction of the earlier West Shrine in LHIIIA2 (1360 BC) the bond was more direct with the Mycenaean mainland whose influence extended over the other islands as well. The most impressive figure of the 'Lady of Phylakopi' had in fact been imported from the Argolid. It is worth remembering, however, that the decorations on the figure were Cretan inspired (p.215), showing the cultural *koine* in Crete and Greece at the time (LHIIIA1) (p.279). It is unlikely that the cult at Phylakopi would have seemed alien either in Knossos or Mycenae. Neither was it necessarily identical, judging from the special architectural features of the shrines and the finds in them.

The two rooms west of the West Shrine are remarkable: niches communicating with the 'cella' and displaying votive figures, which were visible from the main shrine, suggest a kind of inner sanctum or *adyton* and recall a similar feature in the 'temple' of the Mycenaean cult centre. A later extension wall (phase 1c) sealed the southern entrance to the shrine without, however, affecting the worship. After a collapse in 2b, a blocking wall inside the shrine cut off Room A and the s/w platform with the niche. Cult nevertheless still continued unabated and figures were re-used in the subsequent 3a phase. The 'Lady' had been put away by now in Room A with her companion (Assemblage C; for Room B read A on p.112), but smaller figures took her place in an impoverished but continuing cult until the end. Also notable is that the construction of the East Shrine in IIIB, together with an extension wall and city wall eastward from the east of the West Shrine, created a kind of court from the earlier open space. Both doors of the East and West Shrines looked onto this court which was equipped with a bench, a quarter circle of stones possibly for libations, and a shaped stone *baetyl*.

Thee unusual male figures from the West Shrine have few contemporary Aegean parallels apart from Tiryns. The three were grouped

about the new n/w platform (Assemblage G) and separate from the votives (including the Late Psi type, Assemblage B) in the s/w which after the collapse were moved near a new platform on Floor 2 in the n/e of the shrine. Renfrew suggests a division in worship between a female and a male divinity, and indeed the 'Lady' in Room A and her female companion were also connected with the s/w part of the shrine (p.373). The n/w platform continued with its niche into the post-collapse phase 3, although one 'female' figurine now found its way into the 'male' club (Assembl. G and K). In the East Shrine there were no human figures before 3c. The important gold 'mask' from there (3c) may have covered the wooden core of a cult figure (p.302).

Two bronze figures (or figurines by Dr E. French's definition; Renfrew uses both terms on pp.303-6) of the oriental 'Smiting God' are also of considerable interest. Both were imported from Syria in the 13th century (LH IIIB/C) and, although neither was found in a shrine, link Phylakopi to the eastern tradition of the 'Warrior God' type which modelled for some of the earliest Greek sculpture. Relatively few contemporary parallel figures have turned up in the Aegean (eg. Tiryns and Mycenae) and all clearly of the eastern type. Renfrew underestimates the importance of Cyprus (p.310; cf. 436) as an intermediary between east and west and active developer of the type through to the archaic and classical age especially in the Apollo figure at eg. Limniti and Tamassos (Frangissa and Pedieus sanctuary).

Other parallelisms with Cypriot practice suggest themselves in addition to the figure of the 'Smiting God'. Dr E. French remarks on the comparability of the terracottas from the Phylakopi shrines with contemporary Cypriot dedications (p.277). Further the arrangement of cult rooms or shrines about a court, which in the case of Ayia Irini also had a central baetyl, is familiar from Cyprus, as well as the siting of the sanctuary area near the city wall. Evidence from both shrines at Phylakopi of tortoise shell instruments (p.325), which may have been used in cult, also recall a similar use of music and dance in Cyprus' rustic sanctuaries like Kourion where prehistoric traditions survived into archaic times. Finally one of the male figures from the West Shrine with breasts and male genitals (SF1553) has a few earlier parallels like the Kamilari group in Crete but in pose and form closely resembles the bisexual Cypriot centaur (p.223).

The discoveries at Phylakopi are exciting in their own right and important in a wider Aegean context at the end of the Bronze Age. In relating the finds from the sanctuary to contemporary cult activity in the Cyclades (Ayia Irini on Keos), Greece and on Crete this book exceeds the usual limits of an archaeological report. The title, *The Archaeology of Cult*, promises a more fundamental discussion of methodology in the study of prehistoric religion. This the author provides with great confidence, and in the preface and first chapter he devises a theoretical framework for the analysis of purely archaeological data. Rigorous and complicated sets of criteria are established for telling sacred finds from secular through an assessment of the buildings on a site, quality and scale of finds, possible presence of religious symbols, icons, etc. in the local and also wider context of other known sanctuaries. The method refines and therefore improves on more orthodox criteria, but is itself partly dependent on unverifiable assumptions and therefore also fallible.

There is some criticism of historians of religion for discovering sanctuaries or cult places too readily without sufficient critical control, for projecting back from known historical practice to the Bronze Age, or for taking an overall synchronic view of Minoan and Mycenaean cults. Much of it again is justified, especially concerning the analysis and interpretation of the growing mass of monumental remains. But there are obvious limitations in this kind of evidence, and it is rarely convincing to equate changes in artistic styles with social or religious upheavals. Sometimes Renfrew falls under the spell of his own methods in applying them to wider concepts like religion which defies easy definition, certainly in one or two pages (11-12). It also seems unproductive to ask (p.394) 'Was there a Minoan/Mycenaean religion?'. Such convenient modern terms of reference possess no intrinsic semantic significance on their own. It would be equally unhelpful to put the same question about Greek religion as if it had been a homogeneous science.

In the perennial debate about distinguishing between cult images and other kinds of votive dedications size is perceived to be a deciding factor. Thus the largest of the male figures in the West Shrine (SF1550) is described as a cult figure for that reason, and because it carried nothing in its hands (225; 372). That seems right.

Bits and pieces were found in different assemblages (A and G) showing that the figure was re-used in cult in a later phase. But others, though smaller, may also have had more than votive status in the shrine, notably the most elaborately decorated figurine of both assemblages (SF 1553) whose gesture is similar to that of 1550 (although it may have been holding an object in its left hand) and which is clearly bisexual. In another place in fact Renfrew argues (p.417; cf. p.439) that small figurines in the West Shrine stood proxy for the single large cult image ('Lady'). Size could not have been the only or even decisive criterion for a cult statue. For instance, the divine credentials of the monumental figures in Ayia Irini on Keos have not been established beyond reasonable doubt (cf. p.432). The error potential increases geometrically when Renfrew extends the argument outside Phylakopi to the large Early Cycladic marble figures which he now claims as ancestors of the Melian males over a millennium later (p.435; p.438).

The religious historian will be more interested in the bisexual nature of SF1553, curious ambiguity of sex in some of the other figures, and indeed apparent sexlessness of the majority of the dedications. The other Phylakopi males leave no doubt as to their sex, but the same cannot be said of practically all of the 'female' figures including the 'Lady of Phylakopi' whose beard casts doubt on her/his own gender. The explicitly female companion (SF2658; for Plate 56a on p.415 read 34 d, e) might well have been intended to express polarity of sex or at least of function between the two figurines. Dr French notes the lack of sexual accentuation of most mainland figures (p.216) but assumes female gender for all without clear male attributes including the examples from Phylakopi (p.211). Renfrew follows her and 'most writers' but adds his own qualification of an 'indication of breasts, and the general impression of grace' (p.415). From a cultic point of view, however, it might be better to admit sexlessness and bisexuality in contemporary religious belief as indeed it appeared in other Aegean contexts from the Stone Age.

Renfrew links the Phylakopi males with the appearance of male terracottas in the open air sanctuary (Piazzale dei Sacelli) in Hagia Triada in LM IIIC and also with the well known Cretan male bronze figures mostly from caves, but generally dated later to

Subminoan or Protogeometric times. Both Cretan types he believes to have descended from the Melian males which could have been made in LH IIIB rather than in the succeeding period. The Cretan bronzes clearly continued earlier traditions and Renfrew redates them to the end of the Minoan period in order to establish an unbroken line to the end of the Bronze Age. The males, according to Renfrew, are figures of Cycladic western gods unlike the oriental 'Smiling God'. He identifies them in fact as the icons of the long lost gods whose names have been read on the Linear B tablets and who appear in the classical Greek pantheon of Olympians (pp. 420; 423-4; 440).

If correct this would underpin Renfrew's main thesis that there was no break in religious tradition during the Dark Age but earlier in the LBA when the palaces came to an end in Crete and on the mainland (Knossos IIIA, Mycenae LH IIIB). Renfrew speaks of a systems collapse ending centralised 'state' religion and leading to the spread of a 'popular' or 'folk' religion which was celebrated in new 'domestic' shrines. Archaeologically this social upheaval was signalled by the appearance, in Knossos, Gournia, Kannia, Prinias, Gazi, Karphi, etc., of a novel kind of cult assemblage principally consisting of the well-known Goddess with Upraised Arms (GUA) in her own separately built 'domestic' shrine. Renfrew links this phenomenon with the construction of the West Shrine in Phylakopi and the figure of the 'Lady' (whose arms unfortunately are lost) in Room A. Phylakopi's closest bond at the time was with Mycenaean culture, and the goddess was indeed Mycenaean, according to Renfrew, as was her characteristic gesture (a 'general attribute of holiness and sanctity', p.432). But ultimately she had been Minoan-inspired, showing a 'reflex' at the time of Minoan religious forms from the mainland and a cultural *koine* in the western Aegean (p.437).

Renfrew's conclusions perhaps overstretch the Melian data in order to integrate the sanctuary in the sequence of events in Crete and Greece. His case would also be stronger with a wider range of comparative controls than the three contemporary Minoan shrines (Knossos, Gournia, Gazi) and the scenes from the Hagia Triada sarcophagus. (Gesell's excellent study provides a diachronic survey, *SIMA* LXVII, 1985. Renfrew does not mention her in his bibliography nor any work of Schachermeyr for that matter.)

However, Renfrew's conclusions are important and not implausible in themselves but the evidence is not always unambiguous. For example, in Mycenae palace and cult centre ended together in LH IIIB. But at Tiryns, which had some of the closest parallels with Phylakopi, shrines and effigies in the 'Unterbürg' continued beyond the palace thereby clouding the impression of a break.

A more fundamental question concerns the extent to which information about social or cultural customs can convincingly be extracted from the purely material remains. Bench shrines were not new in post-palatial times. Separate natural and constructed sanctuaries, too, had a long history: apart from caves, they did of course exist on peaks and elsewhere both within and outside settlements. Rural sanctuaries have disappeared but are shown on rings and seals. The GUA herself, together with bull and her other animals, had antecedents in Crete. She was never stereotyped but varied considerably in form, even the position of her hands and arms was rarely the same from one figure to another. Her facial expression, too, shows a surprising variety, and it is anyone's guess if and when such differences reflected changes in artistic style or in her nature and functions. Her various attributes on individual icons do occasionally suggest the latter, but the distinctions are far from clear, and at the end of the book Renfrew more plausibly speaks of her image as representing 'a class of divine personage', perhaps the Potnia of the Linear B tablets (p.433).

The absence from Phylakopi in its Minoan phase of the two best known religious symbols, the horns of consecration and the double axe, is remarkable and appears to point to differences in cult (pp.389; 395; 429). Renfrew discounts the imported ivory ring as irrelevant. The horns of consecration, which are shown on it, constituted an alien symbol for the Phylakopians in the same way as the cultic scenes on the Minoan type gold rings from the Shaft Graves at Mycenae and elsewhere on the mainland were incomprehensible to the natives. According to Renfrew, who follows Vermeule's explanation, Minoan princesses brought the rings with them as a kind of dowry and the Mycenaeans recognised the Cretan religious symbols on them but not their true meaning (p.399). The point is arguable but leads to Renfrew's most interesting example of what Glyn Daniel called controlled imagination in the interpretation of

the archaeological data.

Religious symbols, he maintains, travelled beyond their home but without their original significance. Where the same symbols occur in different places in a region, they signal a community of religious expression but not identity of cult and cult figures. Such symbol systems resulted from a kind of 'peer polity interaction' which means, I think, that neighbouring states borrowed the outward forms of cult from one another but not its substance. The theory applies equally to whole common cult assemblages like the GUA in her shrine with animals, votives, etc. and to individual items like double axe and horns of consecration which presumably in their new context became decorative objects rather than sacred symbols and carriers of divine power (eg. pp.367-8; 394-5; 396).

The Archaeology of Cult abounds with such ideas and suggestions of new methodology which are often persuasive and even when they are not are always deserving of serious consideration. The book is a model of collective expertise and definitive on the fascinating sanctuary at Phylakopi. On the wider issues of contemporary Aegean religion Renfrew's contribution is enormously vital and provocative but inevitably his methods remain theoretical and their limitations have to be recognised.

BERNARD DIETRICH

FRAYN, J. M. *Sheep-rearing and the wool trade in Italy during the Roman period* (ARCA, 15). Liverpool, Francis Cairns, 1984. 208 pp., 13 figs., 8 pls. £20.00.

It should be said at the outset that this is a useful and well written book. It has something of value for those interested in Roman studies and for environmental archaeologists, although it appears to be aimed primarily at the former group. Its ten chapters deal with every aspect of sheep-rearing and wool production, beginning with

a consideration of the geographical distribution of sheep (and the suitability of different zones for sheep rearing), and continuing, in Chapter 2, with a description of Roman sheep breeds. The next three chapters consider the husbandry and way of life of Roman shepherds, showing that transhumance was well organised and recognised by the state, but that shepherds were seen as something of a social anomaly. Chapter 6 is a brief survey of the writings of Roman agronomists (who are, however, referred to throughout the book). Chapter 7 describes Roman ranching, and shows this to have been separate from transhumance, with sheep herds of considerable size being owned by wealthy landowners whose 'ranches' were very extensive. This appears to have been a fairly late development, and was sometimes seen as an unwelcome change, for example in a passage from Seneca, quoted at length on p.111. Chapter 8 discusses dairy produce, showing that the production of cheese was, perhaps, the most important aspect, and Chapters 9 and 10 consider the production, processing and trade of wool.

There are, however, a few criticisms of this book, mainly in relation to the style of publication. It is a slim volume (208 pages), which at £20 is very expensive, yet there are few illustrations (13 figures and 8 plates). In some cases the illustration quality is poor (Figs. 1 and 3), and the copy supplied for review had a major printing fault on p.28: a blanked-out area. Poor editing is evidenced by errors such as the repeat line printed on p.23 and mis-spelling of withies on p.131. The notes to the text are printed at the end of each chapter, making them difficult to consult. They would have been better printed as true footnotes, or in one section at the end of the book. The figures are only seldom referred to directly in the text, most references occurring in the chapter notes, and some not referred to at all. Finally, although the latin is italicised throughout, the single scientific name used (that of lungwort, *Pulmonaria officinalis*) is not (p.104). These are all relatively minor points, but they add up to indicate a fairly poor level of editing and style of publication.

The main asset of this book is the extensive use of contemporary Roman writers, who are well quoted and referenced. The literary, rather than scientific, training of the author is evidenced by the minimal use of archaeological, and especially envi-

ronmental, evidence. The discussion of sheep breeds, for example, would have been much enhanced by a consideration of the evidence from bones and woollen remains. Generally, however, this is a useful addition to the study of sheep husbandry, and should be recommended reading for any student or researcher of the subject.

BRUCE LEVITAN

BLAZQUEZ MARTINEZ, J. M. and REMESAL RODRIGUEZ, J. (eds.). *Produccion y comercio del aceite en la Antigüedad: Segundo Congreso Internacional*. Madrid, Universidad Complutense, 1983. 616 pp., 250 + figs., plates and tables. Price not stated.

REMESAL RODRIGUEZ, J. *La 'annona militaris' y la exportacion de aceite Betico a Germania: con un corpus de sellos en anforas Dressel 20 hallados en Nimegan, Colonia, Mainz, Saalburg Zugmantel y Nida*. Madrid, Universidad Complutense, 1986. 283 pp., 23 figs., 18 tables. Price not stated.

The two books reviewed here present a wealth of new information for historians and archaeologists interested in the economy of the ancient world. Olive oil was a vital component of that economy, though the information relating to its production and trade has rarely received the attention which it merits.

The published proceedings of the second conference on *Produccion y comercio del aceite en la Antigüedad* (the first conference was published with the same title in 1980, also by the Universidad Complutense) comprise 24 of the 25 papers given at the conference. In a short review it is not possible to mention each individual paper and I shall concentrate on wider questions. Firstly, it must be stressed that the volume would be more appropriately titled 'Comercio y Produccion', since the vast majority of the papers deals with evidence for trade, with a

particular bias towards amphorae studies - as is made clear in Blasquez Martinez's lengthy, but very useful, survey of recent developments. This is one out of a total of 15 papers relating to typologies, distributions and above all to stamps on amphorae, most of the discussions centering on the globular Dressel 20 form from southern Spain. Only a few papers deal in any detail with the evidence for massive exports of olive oil from North Africa (Beltran Lloris, Keay, Panella), but D. Manacorda's demonstration of the potential for prosopographical study of stamps on Tripolitanian amphorae can only serve to increase interest in the rivals to the Spanish industry.

Whilst the geographical spread of research is impressive (covering sites in Britain, Germany, France, Spain, Italy, Switzerland, Yugoslavia and the Eastern Mediterranean), there is still an urgent need for greater attention to be paid to the far larger assemblages of the towns of the Mediterranean littoral. Greater standardisation is required, however, in the way in which amphorae are recorded, preferably adapting the weighing and sherd counting methodologies advocated by Peacock and Williams and Panella, which allow for much more subtle, quantitative, analysis of the data.

Several papers are concerned with broader issues concerning the technicalities and organisation of the Spanish oil exports (notably Ponsich on the topography of the River Guadalquivir and Rodriguez Almeida on epigraphic evidence from Rome). Remesal Rodriguez, in reporting a new excavation of a kiln site on the Guadalquivir, described important evidence for changes in the production of Baetican amphorae during the third century AD.

Under 50 pages are devoted to evidence for olive presses, though this includes a useful overview of the Spanish evidence by M. C. Fernandez Castro (pp.568-99). One hopes that this imbalance can be corrected at future congresses.

The editing of the volume has been very much *laissez-faire*, with no evident attempt to standardise the presentation of the papers. The absence of a full list of figures, plates and tables is to be regretted, though the editors' priority was clearly to achieve rapid publication of the proceedings. There is no doubt that they have produced a substantial and very useful volume.

Remesal Rodriguez's book on the '*annona militaris*' is also an important work. The corpus of known Dressel 20 stamps from six sites on the German *limes* is valuable in itself, but the commentary and analysis provided by the author vastly increase its significance. The first section concerns the history and methodologies of amphora research, whilst the second explains the basis for dating the Dressel 20s by their shape and rim forms or by their stamps. The third chapter (pp.35-70) is perhaps the most thought-provoking, with statistical information derived from the corpus presented graphically. Remesal Rodriguez's knowledge of the kiln sites in Baetica is much apparent here, with 445 of the 633 stamps being assignable to specific production sites. About 40 kiln sites are represented, but of the 445 stamps, 97 (22%) came from a single site - La Catria - with a further 73 (16%) traceable to sites in close proximity to La Catria. Another major zone of production centred on the small towns of Arva and Canama downstream from La Catria (with 24%). Two other sites, Malpica and Las Delicias, made up the bulk of the rest (19%). Over 80% of the stamps, therefore, came from 5 major sites or other kilns in close proximity to them. Remesal Rodriguez analyses the implications of this, in a series of graphs which compare the relative numbers of stamps from the five main production centres at each of the six German sites and which also illustrate the changing pattern of supply through time. The comparatively large numbers of stamps from each of the six German sites (varying between 85-137) suggest that there is a reasonable chance that the trends detected are significant.

In the final chapters (pp.81-112) Remesal Rodriguez considers the evidence for the organisation of the *annona militaris* and what the implications of this might be for our interpretation of the transport of bulk supplies of olive oil to the German *limes*. Whilst his conclusions remain speculative in some key areas, there is no doubt that this discussion represents a useful marshalling of the available evidence.

The corpus of stamps (accompanied by 1:1 drawings) will be a major source of reference for archaeologists, particularly as it is clearly organised. The main listing is in alphabetical order by *nomen* or what is assumed to be the *nomen*, following Dressel's original practice (eg. L.A.F. is listed under A, next to G.A.F.). In cases where a

single name only appears on the stamp, generally a *cognomen*, they are listed at the end of the letter section (eg. SATURNINI follows the *tria nomina* entries for S). Subsequent indexes list all stamps alphabetically by both first and last letter to assist location of particular stamps within the corpus. Another index gives an abbreviated list of all the stamps with indications of which of the German sites they were present on, their date and production site where known. There is also a full table of concordance with CIL XV and with Callender's catalogue of stamps.

D. J. MATTINGLY

RUSSELL, H. F. *Pre-Classical Pottery of Eastern Anatolia* (BAR Int. Ser. 85). Oxford, British Archaeological Reports, 1980. vi + 176 pp., 31 figs., 6 tables. £8.50.

The author has performed a most useful service to those interested in early Anatolian ceramics by analysing and classifying a hitherto unpublished corpus of prehistoric and pre-Classical sherds collected in 1956 by Charles Burney. Although these were surface finds, they were recovered from eastern Anatolia, that vast, mountainous area, not well-known archaeologically, which lies between Malatya and Lake Van. He has also included some sherds collected from a more southerly area (Adiyaman Province), surveyed by himself. The periods dealt with are Neolithic, Chalcolithic to 1st Millennium (sherds of later periods having already been published by Burney).

Before attempting to classify Burney's sherds, the author carried out extensive comparative studies, not only visiting the excavations which had taken place since Burney's time (several of these being tells visited earlier by Burney), and discussing the material with the excavators, but also examining sherd collections of early pottery in museums. Thus he was made aware of the relative stratigraphic - and often chronological - position

of many sherd types present in the surface material. He has wisely taken into account the classification methods used by those dealing with excavated sites, eg. M. K. Buccellati at Korucutepe and A. Palmieri at Arslan Tepe among others.

The sites from which the surface collections were made fall naturally into the following groups, separated from each other by topographic barriers or unsurveyed terrain: Van, Muş, Elazığ, Malatya, Adiyaman. These sherd groupings are interpreted based on further grouping into 39 ceramic types under their conventional names, such as Dark Faced Burnished Ware, Halaf Ware or Transcaucasian Ware, etc. Their distribution and incidence is presented in tables, and the sherds are well illustrated. There are catalogues of sherds, of sites, and maps of each region are provided; the bibliography is comprehensive up to 1980.

The author discusses the many archaeological problems connected with Eastern Anatolian ceramics in the light of available C14 dates and other recent studies; one example is the question of the applicability of Braidwood's term 'Dark Faced Burnished Ware' to any but Amuq Plain sherds and another is the controversy over what is 'true' and what is 'local' Halaf. Although many such problems remain unresolved today, the author has added to the body of knowledge available from a remote region which badly needs further research.

L. COPELAND

CANBY, Jeanny Vorys, PORADA, Edith, RIDGWAY, Brunhilde Sismondo and STECH, Tamara (eds.). *Ancient Anatolia: aspects of change and cultural development. Essays in honor of Machteld J. Mellink* (Wisconsin Studies in Classics). Madison, University of Wisconsin Press, 1986. 120 pp., illus. \$35.00.

Compared with the monumental *Festschrift für K. Bittel: Beiträge zur Altertumskunde*

Kleinasiens, Mainz, 1983, this Festschrift for Professor Mellink is a modest offering of eleven, mostly short, essays. With her wide range of interests which embraces Bronze and Iron Age Anatolia and its contacts with the Aegean and its chronology, archaeology, foreign relations, art and religion, one might perhaps have expected the editors to have widened the choice of contributors a little more. There are numerous others who would willingly have contributed an essay in her honour.

Every reviewer has of course his own preferences, based on his interests and as reviews, in my opinion, should be constructive (why read waspish ones?) I shall concentrate on T. Özgüç's essay (p.31-47), on the relationship of Kültepe with southeast Anatolia and North Syria in the third millennium BC. The evidence here presented is vital to Anatolian EBA chronology and trade relations, as it deals with imports into Kültepe from at least three different regions: North Syria, west of the Euphrates and Cilicia; North Syria in the Euphrates, Balikh and Khabur areas, and in rather vague terms West Anatolia. One might note the absence of imports from the East Anatolian (Transcaucasian EB3 province) or of anything that is confined to Assyria or Southern Mesopotamia, barring lapis lazuli beads that must have passed through these territories from its source in Badakhshan in Eastern Afghanistan.

Although C-14 dates appear to be regrettably absent (in 1957 when these excavations were conducted its significance had not yet sunk in!), T. Özgüç now has a fourfold division of the EB3 period at Kültepe (from top to bottom, levels 11a, 11b [burnt], 12 [burnt] and 13 [burnt]) between level 10=Karum IV=MBI and levels 14-17, which are EB2.

On the basis of southern imports the Kültepe sequence can now be linked to the Mesopotamian scheme. The evidence available at present suggests that trade relations can be demonstrated between Kültepe and its neighbourhood (Fraktin) and the Euphrates at Malatya as early as final Ubaid, c.4500-4000 BC. Incidentally the earliest culture within the Halys basin, the Late Chalcolithic of İkiztepe on the Black Sea is of the same date. Kültepe is about half way between it and the Euphrates and at the dawn of Anatolian history (Kültepe Ib) a king of Mama, Anumhirbi, whose territory is adjacent to that of Kanesh, campaigned over this same long stretch of territory, setting up a victory monument on Mount Adalur (Kurt

Dag) between Aleppo and Maraş in the south and battling with the king of Zalpa (Ikiztepe) in the north. The possibility that he was attempting to control the old trade route cannot be ignored. In Hittite times the turbulent Kaska tribes of the Pontic Mountains attacked Hittite territory as far south as Kanesh, Ninasa and on one occasion Hahha, which if identical with Hahhum is probably to be located at Samsat on the Euphrates south of Malatya.

Military expeditions and trade are always closely linked and in the period that lies between a hypothetical opening of this trade route from Euphrates to Black Sea Coast and recorded campaigns - the Early and Middle Bronze Ages - fall legendary campaigns of the great Mesopotamian conquerors of Agade (themselves of Syrian origin), Sargon and his grandson, Naram-Su'en. The authenticity of these events, long suspected by M. Mellink, is partly confirmed by P. Matthiae's discovery of Ebla and its palace archives at Tell Mardikh, west of Aleppo. The destruction of Ebla is now attributed to Naram-Su'en and a number of other sites like Armanum (Aleppo) and Apisal may have suffered the same fate. This king also left a stela at Pir Husyein, east of Diyarbakir and mentions going beyond Subartu into the mountains. The legends go further and mention that Sargon crossed the Euphrates at Hahhum (Samsat), which was spared, and marched to Purushattum (Acemköy) to settle some difficulties that had arisen between its king (Nur-Daggal?) and Sargon's merchants residing there. Naram-Su'en is said to have been opposed by a coalition of seventeen Anatolian kings, among whom three are mentioned: Pamba of Hatti, Zipani of Kanesh and another Nur-Daggal of Purushattum. In the light of the new evidence from Syria these legends probably contain a germ of truth, if not the whole truth.

Tahsin Özgüç's discoveries in the EB3 layers of the mound of Kültepe-Kanesh lend substance to the historical evidence; here indeed are the remains of substantial buildings (palaces or temples), evident prosperity and trading relations with such areas as had come under the sway of the kings of Agade, albeit temporarily. With the veil of pre-history being lifted from northwest Syria there is new hope that the same may happen soon in the adjacent regions of central and southern Anatolia; evidently more extensive excavations will be necessary. What is already clear is that the historically well attested activities of Assyrian merchants in

those parts during the beginning of the Middle Bronze Age, the 'Karum-period' had EB3 predecessors, during which there were kingdoms with dynasties, of varying size and wealth as is illustrated by such cemeteries as those of Alaca Höyük, Horoztepe, İkiztepe, and a number of lesser ones, all in the northern metalbearing part of Central Anatolia. Their wealth must be derived from the supply of metals to Northern Syria, and through there to Sumer and Akkad. In return came such luxuries as lapis lazuli, now attested in Kültepe 13 and 11a, roughly the equivalents of ED III B and Ur III.

Inevitably the publication of this essay involves chronology anchoring Kültepe to north Syria and Cilicia, in a more secure way than was previously possible. There remains the old problem of Kültepe's links to Western Anatolia, on which there are two views. M. Mellink includes all of Troy II, as well as Troy III-V, in Early Bronze 3; whereas others besides myself have included only the end of Troy II in EB3 and the bulk of Troy II retained in EB2. More simply put: does Troy II begin c.2600 or c.3000 BC, and when does its trade with Kültepe begin? On the face of it, only after EB2, none of the characteristic plates having been found in EB2 levels (p.39) there. The Kültepe evidence seems to confirm what was already known from Tarsus, Semayük-Karatas, Kara Hüyük-Konya, Beycesultan, Aphrodisias, etc.; a surge of wheelmade pottery, rooted in the Troy II tradition spreading over most of western and southern Anatolia at a date, computed to lie after the 10th year of Khufu (Cheops), who ruled on K. Baer's chronology 2638-2613 and independently judged to lie around the transition from EB III A to B in Mesopotamia; i.e. around 2600 BC, on the evidence of the Syrian imports at Kültepe.

These events are linked to changes in culture, a decline in the imaginative shapes of earlier and handmade pottery, a greater ceramic uniformity, the introduction of many west Anatolian elements, etc., and political shifts in, e.g. the Konya and Cilician plains, and the rise of Central Anatolia probably at the other regions' expense. Many of the great city mounds in the Konya plain were burnt and not rebuilt in EB3 judging by the spread of surface sherds. A shift in trade routes seems indicated between EB2 and 3, and in places there may also have been a change of masters, with new elements coming to the fore, who half a millennium or more later, will emerge in the texts as speakers of Indo-European languages.

These are key problems in Anatolian archaeology that need to be reviewed constantly in the light of new evidence or new insights.

JAMES MELLAART

YAKAR, Jak. *The later prehistory of Anatolia: the Late Chalcolithic and Early Bronze Age* (BAR Int. Ser. 268). 2 vols. Oxford, British Archaeological Reports, 1985. vii + 467 pp., illus. £24.00.

In the author's words 'This book aims at providing a comprehensive picture of life in Late Chalcolithic and Early Bronze Age Anatolia' (p.1). This is, all would agree, a very laudable intention, as no book on this subject exists, and all previous summaries are short, and worse, twenty or more years old. Much new archaeological material is included in the book, and much advice is offered in favour of a more interpretative, rather than a purely descriptive treatment of the material. There is a proper stress on socio-economic patterns, hitherto very much neglected in this period, settlement patterns and the importance of field surveys (the author has conducted some himself) and what they can and cannot reveal. There are interesting speculations on villages, towns, cities and nomad camps, on density of population, etc., refreshingly represented without any dogma and stressed as tentative speculation. The importance of metallurgy and raw resources and Anatolia's environment is duly taken care of and illustrated with numerous maps. Building methods and varieties of houses, construction materials, etc. are duly noted and neatly combined in a chapter. A chapter on skeletons is presented and some of the conclusions drawn about populations are discussed and their value assessed.

All these are steps in the right direction, including a few *faux pas*, easily spotted. Among these is the use of 'Anatolia' for the whole of Turkey, which is of course geographically acceptable, but ambiguous for

Mesopotamian and Syrian cultures in the south east, no respectors of modern frontiers. Migrations caused by rotting fish is another picturesque touch (p.76); immigration of sea-gulls might also be postulated to clean them up.

What I miss in this book is an awareness of the paucity of material evidence for the period concerned. It is admittedly much richer than it was twenty years ago, but in my view, still not strong enough to support some of the author's conclusions based on it. Much material, new then, still remains unpublished; on the other hand, the author is probably conversant with new material of which we are still unaware, eg. from Turkish Thrace, or the Turkish stretch of the Euphrates. Not infrequently strong opinions are expressed without the necessary evidence to back it up, and this alone makes the use of this book for teaching purposes at times hazardous. Having taught since 1961 - and Yakar was a student of mine at Istanbul University long ago, for a while - unsubstantiated statements in the classroom elicit adverse comment and even more so when they appear in print.

This brings one to the author's view of Indo-European immigrations into Anatolia from the beginning of the Late Chalcolithic, eg. at Kuruçay H. near Hacilar, which he dates to c.4200-3600 BC, followed by the Beycesultan Late Chalcolithic I-IV, 38/3700 - 33/3200 BC (p.119) on C14 evidence.

As nothing remotely similar to the Late Chalcolithic Kuruçay material has yet been found or published from anywhere in SE Europe, the suggestion that it is in any way related to putative invasions by Indo-Europeans (Kurgan I on M. Gimbutas's scheme) has no basis in fact. The excavator of Kuruçay, Professor R. Duru, believes that the Late Chalcolithic people destroyed the earlier Hacilar I settlement, and settled on top of it; he rejects the low date, which is completely at variance with those we obtained from Hacilar I, which calibrated is c.5500, not 4200 BC. Yakar's dating of the Late Chalcolithic of Anatolia, starting at c.4000/3800 BC puts it in line with the beginning of the Uruk period in Syro-Mesopotamia, which would suggest, if *logically* followed, that if Uruk equals L.Chalcolithic, Hacilar at Kuruçay is contemporary with the preceding period: Ubaid. For theorists, unaware and oblivious to stratigraphy, the presence of a Syrian(?) Halaf sherd in Hacilar I may be unimportant; to field archaeologists its presence means

that Hacilar I (and the equivalent material from Kuruçay, 5 kms away) is *not* contemporary with Ubaid, but with Halaf. This is not just a question of dates, whatever they are, but of common sense recognition of similar archaeological evidence - a Halaf sherd from Ras Shamra, Carchemish, or Arpachiyeh, or Hacilar links these areas into a more or less contemporary period. If Yakar is right in placing the Late Chalcolithic of Kuruçay at c.4200 BC, it implies a linkage with Ubaid 4 (its latest phase in Lower Mesopotamia and with Değirmentepe near Malatya), the archaeological demonstration of which would be not so much a *tour de force*, as a futile exercise in chronological acrobatics. This is of course nothing new; Braidwood dismisses the much earlier neolithic site of Çatal Hüyük as a 'westerly variant of the Halafian tradition'; second rate stuff, presumably, derivative and not original.

Such visionary attitudes to archaeology have long dominated research in the Near East creating myths of superiority with Mesopotamia as the fountain-head of all excellence. The image has worn thin and with new discoveries outside Mesopotamia other cultures also demand our respect. In this work also the old awe has not yet been overcome. Many of the concepts linked to Sumer and Akkad appear to be much more widespread throughout southwest Asia and as long as the huge Early Bronze Age mounds in the Konya plain remain unexcavated arguments about urbanisation or lack of urbanisation remain futile. What is needed is more evidence not less; theory is no substitute for facts, even if 'facts only complicate matters'.

Yakar is a firm believer in Indo-European migrations, often unreasonably so, in my opinion, to account for features and similarities that could also be interpreted through contact and trade, eg. the Ezero culture, now that Özdoğan's surveys have shown that Turkish Thrace culturally belonged to Europe (pp.75-6). That I-E elements found their way into Anatolia from across the Bosphorus and Dardanelles is inherently likely, but their influence on the material culture of Anatolia in the period concerned appears to be minimal before EB3 and then only negative. In my opinion the rich cemeteries of EB2 and 3 dynasts are those of native populations, not I-E newcomers.

In an earlier article (AS, 1979, p.67) Yakar wrote: 'I agree that calibrated C14 dating, despite its deficiencies, cannot be

totally ignored. But I suggest that *all* reliable dates, and not only those fitting any particular chronology, should be considered in the process of selection. As it stands now most Anatolian Cl4 dates do not really favour a chronology as high as the one proposed by Mellaart¹.

In this book Yakar reverts to the so-called Middle Chronology; he does not practice what he preached before and opts in general for low dates, including some isolated ones, few other scholars find acceptable (eg. on p.119). And what is a *reliable* date and on whose authority is it considered reliable? Yakar's attitude to calibrated Cl4 dating is bizarre; he does not like Bulgarian dates and seems to infer that the system changes across the Turkish frontier (p.79-80). He also has no objection to shifting Beycesultan's Late Chalcolithic 4-2 into West Anatolian EB1 (p.162) or suggesting that at this site the black wares can be confused with EBA wares (p.162). As the excavator of the sequence I can assure him that he is utterly wrong. This sort of criticism is unacceptable and betrays his unfamiliarity with the material. As a matter of fact Yakar listens too often to people whose knowledge of Anatolian material is often only second hand. Unable to discern between valid and invalid opinions he has *concocted a chronology of his own* that might have been produced by a committee; no firm opinions, only compromise. I shall leave it to others to dispute it in detail, having given one example of how this constipated sequence distorts broader based cultural relations with ludicrous results. The author of course is entitled to his opinions - we do not all have to agree - but to me the book is regrettably spoilt by a faulty chronology. If Yakar regards my dates - which allow a little leeway for expansion - too high, his dates, which do not, are in my opinion too low. Whichever is the greater fault, future generations of archaeologists will judge; only they will have more material at their disposal. What matters at the moment is not the quasi-exact dates, but the construct of contemporaneity and cultural relations that can be deduced from them.

To come back to Yakar's initial date for his IE at Kuruçay and no doubt elsewhere; a date of c.4200/4000 BC would fit in with M. Gimbutas' reconstruction of the First Kurgan ware c.4400/4200 BC. On my dating Hacilar I, if destroyed by the people of L.Chalcolithic Kuruçay, would give a date of c.5500 BC, which in the regions of Southeastern Europe lies

long before the first recognisable presence of any IE elements from the Pontic Steppe. If one does have to search for Karanovo VI-Gumelnitsa refugees in pottery terms, they can be argued to influence Beycesultan Late Chalcolithic 3 and 4 where the white painted decoration may be Anatolia's equivalent of graphite painting in Thrace up to the Sea of Marmara. In anybody's chronology, Yakar's excepted, *well before* any Indo-European movements into Anatolia.

Summing up, Yakar's book contains much that is of great interest and a mass of very useful illustrations, but alas, forced into what I would call an overtight and unconvincing chronological straightjacket.

JAMES MELLAART

McNICOLL, Anthony. *Taskun Kale: Keban rescue excavations, Eastern Anatolia* (British Institute of Archaeology at Ankara, Monograph No. 6) (BAR Int. Ser. 168). Oxford, British Archaeological Reports, 1983. 266 pp., 130 figs., 40 pls. £15.00.

In the early 1970's the British Institute of Archaeology at Ankara moved into the international rescue archaeology project launched by the Middle Eastern Technical University on the upper reaches of the Euphrates river in eastern Turkey in advance of the construction of a massive dam and a huge man-made lake. David French, the Institute's Director, planned and directed the British contribution under the name of the Aşvan Project, a multi-disciplinary field enterprise which aimed at recovering broad-spectrum information about the whole chronological range of the area's settlement history through the medium of investigating a pair of neighbouring sites within the framework of their physical environment and ethno-historical context. Stephen Mitchell produced the first of the excavation reports on Aşvan Kale itself in 1980; and Tony McNicoll, who died tragically young in 1985 after a long illness, lived long enough to see the publi-

cation of his report on the excavation at the site of Taşkun Kale, three kilometres up the valley of a tributary stream.

The site of Taşkun Kale was occupied first in the Early Bronze Age in the third millennium BC, again in late Hellenistic and Roman times, and finally by a 10-hectare settlement of the 14th century AD, bi-focussed on its church and on the fort which gave the site its modern name. Very little of the middle period of occupation survived to be excavated after being exposed to centuries of erosion and then levelled and terraced at the construction of the fort. And the Early Bronze Age material, reached only in a sounding, is to be treated separately in another volume devoted to the remains of that period from the whole project. Thus most of this report is concerned with the final, short phase of settlement, and in particular with the fort and the church. In the words of the author, this volume is 'a basic, skeletal record of the dig, with a minimum of interpretation'. However, there is good reason to reject that over-modest assessment: although certain specialist reports (eg. on the physical environment and the prosecution of agriculture) will appear in later volumes, the report is much more than 'basic' or 'skeletal', and its level of carefully segregated, intelligent interpretation is much more than minimal. Unmentioned in the author's prefatory remarks quoted above is another aspect of the report, the necessary (but rarely seen) exposition of the methodology of excavation and recording balanced by a fascinating and totally candid review in the light of experience of the limitations, shortcomings and faults of the chosen methods.

The excavation report proper deals with the work on the kale itself, and with the second area of concentration some 150 metres away, where a contemporary Christian church, built on the site of a much earlier church, was explored. The following sections then describe and discuss the glazed and unglazed medieval pottery, the pottery of the classical and early Christian phase, and the small finds, which consist of coins, jewellery, a few metal objects, some faience, glass and five stones with simply carved crosses. Tony McNicoll's work closes with an admirably concise four pages of conclusions. This is followed by an essay in the spatial analysis of the fort by Roland Fletcher, in which he identifies signs of regularity in the spatial ordering of features, which then tends to dissolve into disorder. There is also a short series of

appendices of tabulated information, but including one by Sebastian Brock on the little group of fragmentary Semitic funerary inscriptions. As well as the standard archaeological illustrations of plans, sections and artefacts, there are helpful and illuminating explanatory diagrams and isometric semi-reconstruction drawings of the building complexes. The standard of reproduction of the illustrations, which were certainly drawn to appropriate scales with appropriate pens, is disappointing; the results are frequently blurred, and much detail has been blotted and blacked out in the printing process.

The extent of the settlement around the kale was determined from the surface scatter of pottery, and practically no time could be devoted to its excavation. The rebuilt church and its attendant graveyard would seem to have been the religious centre of the settlement. The kale was an oval enclosure with rectangular bastions and a single entrance; all around the interior of the enceinte wall was disposed a range of 30-odd rooms, and at the centre is an irregular, roughly oval courtyard. Many of the rooms showed indications of use as living quarters of the putative garrison.

McNicoll points to the abandonment of the agriculturally preferable site of Aşvan, which was also strategically sited at the Euphrates crossing, while Taşkun was briefly occupied, and to Taşkun Kale's situation controlling the road between the river crossing and ancient Harput (modern Elazığ). He infers that the fortress was ill-equipped to withstand attack or siege, and too small to serve as a refuge for the villagers. In view of the historical situation in the early 14th century, when the Ilkhanid dynasty was asserting its authority through eastern Turkey, he argues persuasively for the interpretation of Taşkun as the compulsory and short-lived resettlement of the Christian inhabitants of Aşvan under the watchful eye of a gendarme-like garrison in the kale. Not surprisingly, there are no known parallels for such a site, because no-one has undertaken this kind of archaeological project before and excavated such sites. The demands of rescue archaeology concentrated attention in a part of Turkey which had not previously drawn archaeologists; but the British Institute's project must take the credit for the fertile way in which the new ground has been broken.

TREVOR WATKINS

SAGHIEH, Muntaha. *Byblos in the Third Millennium BC: a reconstruction of the stratigraphy and a study of the cultural connections*. Warminster, Aris & Phillips, 1983. 147 pp., 80 figs., diags., pls. £28.00.

Byblos, on the coast of the Lebanon to the north of Beirut, where digging began in 1924, has long been known as a place of an importance quite disproportionate with its relatively small size. In the eyes of Egyptian pharaohs of the Archaic and Old Kingdom dynasties the Lebanon was a vital source of timber, now a mundane staple of ordinary industries, but then a strategic material essential for temple or palace building as well as the construction of large, sea-going ships. Egyptian favour towards Byblos is evidenced by the unsurpassed number of prestige objects inscribed with the names of a long series of pharaohs. The Levantine coastal cities were also of considerable importance to the equally ancient kingdoms of southern Mesopotamia, although direct contact was more difficult for them. In the eyes of modern archaeologists Byblos ought to hold the keys to unlocking the cultural and chronological correlations between the well-worked southern Levant and the much more reticent but tantalising Early Bronze Age crossroads of Syria. Yet, despite copious volumes of *Fouilles de Byblos*, we know very little about Byblos or its excavations, because the excavation and publication strategies of the French expedition scarcely seem designed to elucidate.

Muntaha Saghie's book is produced from her Institute thesis, retyped single-spaced and photo-reduced onto a long, narrow page with a broader outer margin, in which 'foot-notes' are set alongside rather than under the text. The unusually large overall dimensions of the book, which is well above A4 size, do not make it easy to handle. A few pages at the beginning and end, such as the title-page, the tables of contents and bibliography, have been conventionally typeset. All the illustrative material is concentrated at the rear of the volume, the bulk consisting of schematic 'sections' reconstructed by the author to run through the building complexes, accompanied by tiny plans which serve to label walls and locate sections, and thumb-nail sketches of objects. The figure numbers are buried in the body of each such illustration, which does not make them easy to work

with; and objects referred to in the text may only be located in the illustrations by noting in which phase of which building they are reported in the text and then finding the figure which records the reconstructed sections for that building. The author's own drawings of some of the pottery studied in Beirut are of a very much better standard than the strange little sketches reproduced from the excavator's report.

The author's main task, and the one on which most time and attention were clearly expended, is the attempt to assemble from the available records a structural history and stratigraphic analysis of the third millennium material. This lengthy first chapter, which in fact occupies more than half of the whole book, tests to destruction the contention of the excavator that, despite the acknowledged deficiencies of the excavation and a publication devoid of even the lowest level of synthesis, '... nous présentons aussi au lecteur tous les moyens de contrôle et de recherche pour se faire une opinion originale'. Muntaha Saghie can at best give heightings on the tops and bottoms of walls. Everything else (except where there was a stone-paved floor) was removed in arbitrary, horizontal, 0.20 m spits, which were also referred to by their heights. Selected finds (whole pots, bronzes, stone vases) were kept and recorded by reference to the spit and the grid-rectangle (no squares at Byblos). Major fire destruction horizons were also noted.

From this meagre information Muntaha Saghie is able to put (some) objects back inside buildings and relate their arbitrary spit to some walls. In the end, however, as the author frequently has cause to remark in her phase by phase discussion of building after building in area after area, the analysis reveals unpleasant lacunae and serious discrepancies which can only very occasionally be resolved, and that, alas, hypothetically at best. While Dunand's own discussions of important building complexes can be shown to be inconsistent with the published facts and changeable over the years, Muntaha Saghie's reinterpretations seem eminently reasoned and often preferable, but remain ultimately untestable. None of the crunch questions involving dateable objects in buildings can be answered definitively, simply because there were no stratigraphic or structural relationships noted between the spits within which artefacts were recorded and the vertical stone structures. One

thing which is most succinctly demonstrated is that, in any case, many of the stone vessels inscribed with the names of Egyptian pharaohs must have been found in contexts many centuries removed from their date of manufacture.

It is perhaps disappointing that no general synthesis of the city of Byblos and its important role as a commercial and cultural intermediary over the third millennium BC is attempted. The author remains strictly concerned with a lower level of synthesis. Having completed her analysis of the structural history and reconstructed things somewhat within the general periodisation proposed by the French, the rest of the work is concerned with working out the chronological range of each phase within the French excavator's periods K and J phases I and II (the basal period L is omitted on the grounds that it is not of the third millennium). Not even the important foreign contacts are pursued beyond the matter of the chronological light they may shed. Chapter II gives a brief and simple review of the pottery, in part based on original study of the material held in Beirut, and Chapter II considers the chronological implications of the pottery in terms of links with Egypt, Palestine and Syria (and the wider world of Anatolia and Mesopotamia to some extent). The author asserts that there is no evidence for contacts between Byblos and Egypt before a certain stage in Dynasty I, contrary to the views of Helen Kantor, which have been sanctified by age and repetition. In this she is contradicted by K. Prag's analysis of the links between fourth millennium Byblos and Egypt in *Levant* 18 (1986). In terms of the correlation with Palestinian Early Bronze Age chronology, which has been so much more thoroughly documented and analysed, there is some inconsistency in Miss Saghieh's conclusions between different parts of the text and between text and the tabulation of the conclusions on p.109. It is also an unfortunate accident of the timing of the two publications that she has not been able to take account of the massive review of EB pottery in the Jericho final publication (or other recent important developments elsewhere).

Chapter IV summarily surveys temple architecture throughout the Near East in the search for parallels which might have chronological significance. The final chapter of conclusions and discussion is indicatively brief, in part because the author has set herself a specific task which excludes general

discussion of the role and significance of Byblos in the third millennium, but most necessarily because the conclusions yielded by the massive input of the author's labour cannot in the end make up for the horrifying inadequacy of the old excavations.

TREVOR WATKINS

MUHESEN, Sultan. *L'Acheuléen récent évolué de Syrie* (Bar Int. Ser. 248). Oxford, British Archaeological Reports, 1985. viii + 261 pp., 93 figs., 9 maps, 27 tables. £15.00.

The author, as a Syrian prehistorian, is well-placed to write on his subject - a new aspect of the Lower Palaeolithic lithic industries of Syria. Having taken his first degree in prehistory at Warsaw University under Professors Chmielewsky and Koslowsky, he was employed by the Syrian Department of Antiquities, taking part in the fieldwork, excavations and surveys which were carried out by various foreign expeditions. He became a member of a French CNRS team who were studying the Palaeolithic and its geomorphology in the Levant between 1978 and 1981: he was joint director of the excavations at an important Acheulean site located on their surveys. Independently he also undertook a study of the Lower Palaeolithic of a little known area in south-western Syria. He presented his dissertation to the University of Lyon in 1982, and this volume is an amended and expanded version of that work.

The title is based on the discovery that a separate phase within the Late Acheulean of Syria could be distinguished, both typologically and on geomorphic and chronological evidence. This phase is regarded as an advance on the earliest Late Acheulean industries (known to be incorporated in 'Rissian' river terraces) while preceding the Final Acheulean complex; the latter seems to have occurred as late as the Last Interglacial and a variant is known as the Acheuleo-Yabrudian, eg. at the well-known cave sites, Tabun, Yabroud and Bezez.

The author discusses the geographic and geomorphic framework, the history of Lower Palaeolithic studies in the area, the chronology of the handaxe-using Acheulean cultures in four (Early, Middle, Late and Final phases), as known in Syria, and describes the basic data available for research. He then presents, in a clear and well-reasoned way, the evidence for the last-but-one industrial phase (the Evolved Late Acheulean), based on his research in inland and coastal regions. The work is plentifully illustrated and there is a comprehensive bibliography.

As the author freely admits, not all the answers to the problems of the Lower Palaeolithic succession are yet to hand, and absolute dates, as well as faunal and pollen evidence, are still lacking. Nevertheless, it is a step forward to be able to use the (even if few) archaeologically and geomorphically *in situ* sites (such as Latamne, Gharmashi Ib, Hamman Kebir, Yabroud) as a basis for 'placing' the large number of surface assemblages, in order to construct a reasonable chronology for the Acheulean of Syria as a whole.

Little further similar work has been done since this volume appeared, so that it should form an indispensable reference for this period in the area for some time to come.

L. COPELAND

SUSSMAN, Varda. *Ornamented Jewish oil-lamps: from the destruction of the Second Temple to the Bar-Kokhba revolt*. Warminster, Aris & Phillips, 1982. (First published in Hebrew by the Bialik Institute and the Israel Exploration Society, Jerusalem, 1972.) xi + 136 pp., illus. £20.00.

This book, based on a shorter Hebrew version, deals with a group of lamps made in Roman Palestine by Jewish artisans, and which are contemporary with the later 'Herodian' lamps. Though similar in shape they differ from these latter in being mould rather than wheel made, and by bearing decoration in delicate relief. They have been found largely in

the region of Beth Guvrin (Beit Jibrin) south-west of Jerusalem: the authoress has accordingly named them 'Darom lamps', Darom being the name used in contemporary Jewish sources for the Beth Guvrin-Hebron region. The book is based on the study both of lamps in the collection of the Israel Department of Museums and Antiquities, and of others privately owned; lamps and lamp fragments found by Professor E. Oren in his excavations at Marissa near Beth Guvrin are also taken into consideration. A sizeable proportion of the total number of such lamps known is presented and analysed, and a number of subtypes in the decoration is established. Detailed study of typological variants in lamp shapes is not undertaken, though the bibliography on p.viii could be used, presumably, by readers interested in these for guidance. The book is in fact intended for those interested in Jewish art as well as archaeologists, and may appeal to the former in particular.

In view of this special slant, the writer offers in her first chapter an outline of the development of the oil lamp in ancient Israel, from the earliest times down to the Arab period, which will help non-archaeologists to see the matter dealt with in its proper frame of reference. In addition, a number of other relevant topics are briefly dealt with here which serve to indicate the place of the oil lamp in the Jewish world of the time, and to introduce other contemporary or slightly later Palestinian oil lamp types which are related to the 'Darom' lamps. Chapter II begins with a brief introduction outlining the religious reasons why Jewish potters shunned, with few exceptions, the representation of living creatures, and those of human beings totally; instead they decorated their lamps with floral or geometrical motifs executed in a fine linear style, or with representations of objects of religious significance in particular, such as the *menorah* (seven-branched candelabrum). Attention is drawn to the relation between this decoration and that found in other contemporary Jewish art, especially on stone ossuaries; indeed, the writer thinks the same craftsmen may have sometimes worked in both fields. Chapter III lists, and discusses in some detail, the various decorative motifs shown on the lamps. These include in particular a number of Jewish emblems used widely in the period, besides the *menorah*, objects of a secular nature which might however have evoked religious associations in the mind of Jewish

customers, but also purely secular motifs like ear rings, and floral and geometric patterns. In the Catalogue which follows the lamps dealt with are presented individually by excellent photographs with accompanying text. The length and width of each item is given, the decoration is analysed in detail, and relevant artistic parallels are noted. (It might have been useful to add find spots and more exact archaeological datings where these are known.)

The book presents its subject clearly, and offers a great deal of information in a succinct fashion. The references to the contemporary religious background which determined the artistic repertoire of the potters will be particularly enlightening to readers unfamiliar with that subject, and the systematic guidance to analogies in contemporary Jewish applied art in other fields is similarly helpful.

A few misprints apt to cause trouble to readers should be corrected in a future edition. On p.23 the oil lamp figured is not no. 42 in the catalogue but no. 45; similarly on p.24 not no. 51 but no. 55 seems intended, and on p.26 not no. 206 but no. 76; and what equivalent in the catalogue is there for the alleged no. 220 on p.27?

The book, the fruit of much labour and which brings together and analyses a body of evidence not previously treated together, will be of real service to historians of ancient Jewish folk art in particular, but also useful to others concerned with the arts and crafts of the Roman and Byzantine periods. Mrs Sussman deserves their thanks.

B. S. J. ISSERLIN

STEIN, Sir Aurel. *Sir Aurel Stein's 'Limes report': the full text of M. A. Stein's unpublished 'Limes report' (his aerial and ground reconnaissances in Iraq and Transjordan in 1938-39)*; edited with a commentary and bibliography by Shelagh Gregory and David Kennedy (BAR Int. Ser. 272). 2 vols. Oxford, British Archaeological Reports, 1985. xxi + 368 pp., 37 figs., 2 maps, 72 pls.; 122 pp.,

17 figs., 1 map, 3 pls. £33.00.

Aurel Stein was famous as an explorer and orientalist long before he tackled the Roman world in his later years. His new interest lay in searching for links and analogies, historical and topographical, between Rome's eastern frontiers and trade routes, and those of the great oriental powers of contemporary date.

The publication of Stein's Limes Report, left in typescript at his death over forty years ago, has long been awaited by scholars. In these volumes, however, we have an archaeological story beginning in the early years of scientific exploration and continuing to our own day.

Stein's own survey forms, of course, the major part of this story. He discussed the topography he observed with erudite relation to the ancient sources, as well as more recent archaeological information. The breadth of his survey is equally important. Covering an area from eastern Iraq to southern Jordan he was complementing the survey of Roman Syria published by Poidebard in 1934. Although Stein attributed a Roman date to most remains which he thought classically appropriate, and some areas are based on second hand knowledge, a more or less complete picture of this stretch of the Limes was built up. Despite the Roman nature of the work, Stein, fired by topographical discoveries, also made acute observations on the campaigns of Alexander the Great.

Like Poidebard before him Stein made extensive use of aerial reconnaissance and photography, as well as visiting most sites on the ground. The importance of this is noted by the editors who observe that it is '... impossible for archaeologists to travel in these areas (today) with the same casual ease ... flying has been out of the question and aerial photographs are usually not obtainable...'. The publication of many of Stein's photographs and plans, along with new ones, forms an important contribution to these volumes. With the commentary on the Limes Report, this archaeological story has been brought up to the present. The sites noted by Stein are here discussed further in the light of subsequent research, accompanied by a full bibliography. The light to be shed upon research by past investigations forms an important part of the archaeological

repertoire, a repertoire now enriched by the publication of Sir Aurel Stein's Limes Report.

JULIAN BOWSHER

stretches back to the time of Alexander at least. However, this omission and the minor mistakes in the English should not detract from as comprehensive a study as we are likely to get of building technology in Nuristan.

JULIAN BOWSHER

EDELBERG, Lennart. *Nuristani buildings* (Jutland Archaeological Society Publications, 18). Aarhus, Jysk Arkæologisk Selskab, Moesgaard, 1984. xxvii + 223 pp., 1 map, 227 figs. Price not stated.

Nuristan is a small but distinct area of eastern Afghanistan. The late Lennart Edelberg had spent over thirty years studying the peoples and cultures of this area. In this posthumous work the subject under scrutiny is the architecture, more properly, the wooden architecture, and associated woodwork. The bulk of the book is dedicated to the domestic house, but there are chapters on graves, stables, barns, bridges and mills.

It is a technical work which analyses each aspect of construction, not only in terms of structural elements, but also the tools, terminology and costs of construction. There are many case studies of buildings known to the author as well as generic discussions. The profuse illustrations include line drawings which clearly reveal the plans and structural details of individual buildings. There are many photographs, in colour and black and white, taken over the last forty years. After a location map at the front and a larger scale map of Nuristan at the back, it is refreshing and useful to find many thumbnail maps scattered throughout the margins which identify all the sites mentioned in the text.

There is an important ethnographic element throughout the book. Edelberg has been careful to remark on the linguistic and social, as well as the geographical, variations illustrated in the area. Edelberg's ethnographic and architectural evidence goes back to the earliest studies in the area, in the last years of the nineteenth century. It is a pity, though, that there is no discussion on the historical tradition of building in an area that has an archaeological heritage that

HART, G. *A dictionary of Egyptian gods and goddesses*. London, Boston and Henley, Routledge & Kegan Paul, 1986. xv + 229 pp., 80 figs., 2 maps. £12.95 (hardback); £5.95 (paperback).

In what is virtually a pocket dictionary the author describes most of the Egyptian deities including several fairly obscure ones and a few of Asiatic origin which were worshipped in Egypt. Not all are, however, given separate entries, some being mentioned only as associates of other gods, so that in the absence of a comprehensive index the book loses some practical usefulness. The scale has precluded any sort of documentation apart from a single page of select bibliography. This results at times in vagueness. The first entry, for example, reads simply: 'AKEN. The custodian of the ferry-boat in the Underworld. Rather amusingly he has to be woken from slumber by the ferryman Mahaf to provide the boat for travel on celestial waters'. It might have been mentioned that the source of this information is Coffin Text spells 343 and 397. If the reader does not need to know where this very minor character appears, he will not need the explanation anyway.

The book is agreeably written with the general public in mind, and contains much to interest the browser. Whether in this compressed form it will shed much light is another matter.

H. M. STEWART

SCHÄFER, H. *Principles of Egyptian Art* ;
(edited by E. Brunner-Traut, translated
by J. Baines). Oxford, Griffith Insti-
tute, reprinted with revisions, 1986.
xxviii + 470 pp., 109 pls., 331 figs.
£30.00.

Schäfer's classic grammar of Egyptian
art, first published in 1919, went through
four German editions, the last of which, left
unfinished at the author's death, was edited
by Emma Brunner-Traut and issued in 1963.
The present English translation of that edi-
tion by the Professor of Egyptology at Oxford
first appeared in 1974, and is now reprinted
with addenda and corrigenda, mainly up-dating
the textual notes. The illustrations remain
unaltered. Most welcome in the translator's
introduction are the list of reviews of the
1974 edition and subsequent bibliography,
which serve to carry the discussion forward.

H. M. STEWART

LANCEL, Serge (ed.). *Actes du IIe colloque
international sur l'histoire et l'arché-
ologie de l'Afrique du Nord réuni dans
le cadre du 108e Congrès national des
Sociétés savantes* (Grenoble, 5-9 avril
1983) (Bulletin archéologique du CTHS.
Nov. sér. fasc. B. Afrique du Nord, no.
19: année 1982-3). Paris, Comité du
Travaux Historiques et Scientifiques,
1983. ix + 540 pp., illus. Fr.400.00.

A multi-lingual work on North Africa with
44 contributions, the coverage is mainly arte-
factual and considers amphorae, ceramics,
farms, oil, presses and mosaics. Other sub-
jects dealt with are the economy of Carthage,
Italian merchants in Mauretania, Vandals,
Romans, Islam, Byzantines. Interesting items
are the Venetian coral trade, and the problem
of whether the Carthaginians reached the
Azores. One paper discusses the economic life
of the town of Thysdrus near the coast of
Tunisia. Here there was a workshop for the
manufacture of bone pins - very small and

delicate, and a smithy. This last was
thought to be a lead smelter which was
thought to be a rather surprising plant to
be found in the centre of a town. But it is
clear from the slag analysis that this was
not the case. These slags date from the 3rd
century BC and have close affinities with
those from Carthage.

R. F. TYLECOTE

CLARK, J. Desmond and BRANDT, Steven A.
(eds.). *From hunters to farmers: the
causes and consequences of food produc-
tion in Africa*. Berkeley, Los Angeles
and London, University of California
Press, 1984. xii + 433 pp., illus.
£44.00.

This work derives from a symposium held
by the American Anthropological Association
in 1978 and represents '... the current state
of research into Late Quaternary human/plant/
animal relationships and the processes lead-
ing to food production in Africa' (p.1). In
some thirty contributions the writers range
through many parts of Africa and times from
the Pleistocene to the present. The book is
handsomely produced with a useful biblio-
graphy, many handy maps and tables, and
hardly any noticeable printer's errors.
Jargon is not always absent and, if a sub-
jective impression be allowed, it is mostly
the anthropologists who score rather highly
here, but on the whole it is an easy enough
read.

Many interesting observations emerge.
For example, Kalahari foragers may have a
better balanced diet than the sedentary food
producers of the area, especially in times
of scarcity; or, Kalahari Basarwa who are,
apparently, newcomers to cultivation may
have more success with their few crops than
long established farmers of the same region
(partly because the newcomers seem to be
more selective about the species they use
and more careful about planting them); or,
the consumption of palm oil, rich in vitamin
A, gives some measure of protection against

'river blindness' (onchocerciasis) in the West African areas where it is endemic. It becomes obvious that simple, blanket explanations for the processes of transition to settled farming the various localities can no longer suffice and that the special complexities of each e must also be considered.

Similarly, with lactose intolerance of particular human populations - mentioned several times in the text but not examined in any detail for its adaptive implications - clearly this would influence relationships between human beings and the animals they might or might not rear for dairy products. Another dietary detail - not mentioned in the book - that could be relevant to the discussion is the effect of combining pulses and grains; apparently, these food items are more nutritionally effective when combined in a meal than when taken separately.

As regards interpretation, notes of judicious caution are raised throughout the book: such as the frequency with which plants have been misidentified in the literature; the many and great difficulties the palynologists have in identifying African plant material; the near impossibility of confidently separating domestic bovids from similar wild forms in the existing incomplete bone records; the dangers of interpreting scant remains from a small temporary camp while a more permanent settlement site of the same society may exist elsewhere; or, how the history of Khoikhoi hunters' transition to herding may be coloured by archaeological finds of domesticated livestock in rock shelters, which in reality may be the fruits of thefts by the hunters.

Two of the writers were told by Kalahari Kūa that they did not wish to grow food because 'It's too damned much work'. (p.341)! And, another writer warns '... our time, money and human resources will probably never be any greater than they are now' (p.251). All this and much more makes this a well informed and absorbing collection of papers.

ALEX HOOPER

HERBERT, Eugenia W. *Red gold of Africa: Copper in precolonial history and culture*. Madison, University of Wisconsin Press, 1984. xxiii + 413 pp., 40 figs., 6 pls., 4 maps, 3 charts, 7 tables, 5 diagrams. \$32.00.

In the last few years many of the long held views on the development of metallurgy south of the Sahara have begun to be challenged by new discoveries and dates from all over the continent. The work of French archaeologists in the Sahel region, especially southern Mauretania and in the south of Niger, has revealed the remains of extensive copper production with dates stretching back into the second millennium BC. The work of Bernus and Echard at Azelik, Marandet in the Agades region of southern Niger has revealed thousands upon thousands of small conical crucibles. Some were used to amalgamate prills of native copper collected locally. These are probably medieval, but copper working is much earlier, dating back well into the 1st millennium BC. Other crucibles, including some examined by this reviewer, contained a beautiful lead-copper glass - the familiar sealing wax red of the celtic enamels. This has been claimed as the remnants of a sophisticated purification process but it seems more likely that bead making was also carried on, presumably with glass imported from across the Sahara - the sites do have a long history up to the medieval period.

More recently Grébenart has published a quite remarkable series of structures claimed as smelting furnaces from Afunfun, also in the Agades area. Some are undoubtedly smelting furnaces, remains of well vitrified and slagged clay shaft furnaces with abundant evidence of slag, dating from the 2nd millennium BC, but others are strange affairs of groups of irregular tunnels penetrating some metres into the ground. They too are claimed as furnaces but it is difficult to understand how they could possibly have operated, let alone have been constructed. Although the sides are well burnt and charcoal is everywhere, there is no slag associated with them. Surely they are the burnt out remains of old tree stumps, probably associated with the charcoal production which must have taken place alongside the copper smelting.

Thus it does now seem clear that copper smelting south of the Sahara is now firmly established with Afunfun dating to the 2nd

millennium BC, and sites such as in Mauretania and Azelik in full production early in the 1st millennium BC.

However, excavations all over West Africa and the Sahara show equally clearly that copper and its alloys were not extensively used and thus we may still properly say that Africa did not have a Bronze Age in the sense it is understood elsewhere. In fact, the earliest substantial copper-base artefacts are still the bronzes from Igbu-Ukwu in Nigeria where many hundreds of copper, bronze and leaded bronze castings were excavated from a sumptuous burial dated to about the 10th or 11th centuries AD. The technology and the metal itself have both been regarded as imports to the region because of the lack of antecedents - which is justifiable, but also because of doubts over the technical capabilities of the Africans - which is not. The long local tradition of iron smelting and working, which is at least as difficult as copper smelting, together with the belated discovery that copper was being smelted after all south of the Sahara should dispel doubts over ability to make the metal itself. Recent technical studies on the composition, and on the casting technology of the bronzes themselves by the reviewer should also convince everyone that these remarkable bronzes which stand at the head of all African metalwork are wholly African. To their credit both their excavator, Thurston Shaw, and Eugenia Herbert argued the case for local manufacture, but probably with imported metal.

The overriding achievement of Herbert's book is to bring together all the disparate evidence, some new, some old, for indigenous copper making, distribution and use in Africa from the earliest times up until the end of the last century into one coherent account. The overall treatment is first rate - this is a book the subject has long needed and we must be grateful that the work is so complete, informed and yet so readable. With this book it will at last be possible for those studying metal technology to integrate Africa into the general scheme of the development of metallurgy. Clearly it will be much easier and more convincing now we do not have to try and explain how iron working flourished at least as early as in Europe, yet somehow the Africans lacked the skill or initiative to work copper. Those in the field of African archaeology will find this book invaluable for integrating the story of metallurgy into the framework of African history and especially for showing very clearly the crucial role played

by copper in African society, economy and ritual. Thirdly, economic historians will also find this book invaluable for documenting the immense metals trade that developed between Europe and Africa from the late fifteenth century on, successively controlled by the Portuguese, the Dutch and finally the British.

The book is divided into three principal parts, along the lines described above, metallurgy, trade and society. This reviewer is most at home in the first of these topics, whereas the author is probably more at home in the latter two, but the treatment of copper resources, mining and smelting technology and metalworking given here is quite excellent. The author has clearly put in an immense amount of background reading into the whole book and nowhere does this show more clearly than in the metallurgy sections. It is also a considerable relief to report that here this voluminous reading by someone on the periphery of the subject has been carefully and critically assimilated. Thus, for example, she has strong reservations about the value of trace element analysis of copper base artefacts as a valid means of assigning them to any particular grouping.

There are detailed descriptions of early mines and furnaces based upon early travellers' accounts, field surveys and excavation, for sadly, traditional copper smelting had died out everywhere in Africa by the beginning of this century. Pride of place amongst these descriptions must go to the filmed account made by Monsignor de Hemptinene, Apostolic Bishop of Katanga, who mobilised an entire village of the Yeke people to conduct a campaign of mining and smelting using the traditional methods before their memory was forgotten. The film he made must be amongst the most precious documents of early metallurgy. This and other accounts from all over Africa are used to document and describe the exploitation of copper. The survival of traditional methods so recently - within the experience or living memory of those questioned - is of course extremely useful for giving an insight into areas that are less tangible archaeologically, such as the social status of the miners in periods of the remote past. Thus, for example, Herbert is sceptical about the use of slave labour in African metallurgy and makes the very valid point that smelting is a highly specialised job. This seems eminent common sense, and re-

inforces doubts about how common the use of forced labour ever was in mining or smelting. One suspects the miners were not only free but highly trained and rewarded. The extraction of usable ore from deep workings is a highly skilled task and in the very confined spaces of early mines there was just no room for people who did not know what they were about. The ethnographic parallels given in this book on this topic are salutary, as are the comments on the role of itinerant smiths in African metalworking and society.

In West Africa the local production of copper had ceased long before the arrival of the first Europeans, probably as a direct result of Arab competition from across the Sahara. Tin is rather more puzzling. It was produced on a considerable scale during the 19th century right up until the arrival of modern mining companies in the early years of this century. Previously the trade had been almost exclusively in the hands of the Arabs who took the metal north across the Sahara. There are records of a trade conducted from Kano in northern Nigeria in the 1820s, but how much earlier did this trans-Saharan trade exist? Islamic writers in Egypt and the Middle East of the medieval period list their sources of tin in some detail; South East Asia, North East Asia and Europe are all mentioned, but there is no mention of African tin. It is difficult to understand how the Arabs who were so active in their search for gold, ivory and slaves in West Africa could have missed another valuable commodity, tin, if it had been in production.

The establishment of the European maritime trade changed everything, and not just for Africa. Copper and brass were imported on a prodigious scale - the quantities are recorded in detail. Thus, for example, between 1504 and 1507 the factor at Sao Jorge da Mina received no less than 287,813 manillas of copper and brass. Nor was this all: 1582 shaving bowls, 520 urinals, 3192 chamber pots were also included at just this one port over the same period. These quantities are repeated at forts and stations all along the coast. Not only had Africa never seen trade on this scale before; all over Europe mines and metalworks strained to meet the demand. Anyone familiar with inventories taken from late medieval households where the one brass pot was one of the most valued possessions will realise the impact this flood of manufacture must have had on European production, with, of course, the knock-on effect on the development of capitalism and technology,

culminating in Europe with the Industrial Revolution.

Herbert shows the very central place held by copper and brass in this trade. It was the one commodity above all others that the Africans wished to obtain; gold was held in less esteem. Much, if not most, of the copper and brass was needed as a source of tangible wealth, either as manillas or ingots, or in the more visible forms of the often monstrously heavy jewellery and personal adornments the wives of rich chiefs were obliged to wear. As a complement to this, one of the principal attractions of Africa to the outside world was gold - and this metal always played a significant role in trade, although probably not to the over-riding extent suggested by Herbert. It is in the final section of Herbert's book where this true role of copper in African society is documented in detail, and the conclusion reached that its role was very similar to that of gold elsewhere. One does leave the remarkably well documented chapter on this two way metal trade with the distinct impression of the futility of it all - the enormous expenditure of effort and skill to win these metals, both copper and gold, just to satisfy the desire for hoardable wealth.

This book deals with many areas of scholarship, some of which, such as early metallurgy, and much later the growth of long distance maritime trade, are going through substantial change, not least though some of the new evidence reported in this book as a result of excavation and research in Africa itself. The sheer quantity of information and its judicious assessment give this book immense authority. What a relief that it is handled so lightly by the author, making the whole considerable volume an absorbing read. This must be one of the best books to have been written on Africa, and one which will be of great value to scholars in a wide range of other disciplines.

P. T. CRADDOCK

BEAUDRY, Marilyn P. *Ceramic production and distribution in the southeastern Maya periphery: late Classic serving vessels* (BAR Int. Ser. 203). Oxford, British Archaeological Reports, 1984. xi + 335 pp., 34 figs., 77 tables. £16.00.

There is a type of very beautiful polychrome pottery called Copador, made and used in the Mayan region between 650 and 850 AD. Beaudry's purposes are: 1) to see if all Copador pottery was made in the same place, and to pinpoint the location; 2) to decide if it was made by craft specialists working within a production system geared to standardisation and simplification; and 3) to see if the size of the production system related to a complex exchange system.

Each objective is dealt with in turn, first by providing a theoretical framework, then by detailed analysis, and then by decoding the results in terms of the theory and reviewing progress. The overall organisation is admirable; and there are frequent, lucid summaries which pick up all the threads and carry them on to the final chapter, where they are woven into a useful review of Mayan economic and cultural development.

Unfortunately, the lay-out is often confusing: it would be better to banish tables and footnotes from the main text, unless a difference in type-face could be made. There are some type-setting errors (pp.12 and 14 are duplicates); and there is the odd inconsistency in Beaudry's use of tenses, when describing existing evidence versus past behaviour (eg. p.21).

But as for Beaudry's three objectives and their resolutions, I have more some more serious qualms. The first objective is impeccable, of course, but is NAA (Neutron Activation Analysis) the proper way to reach it? No Copan valley clays were analysed, and there was no study of the coarse composition of the fabrics. The other objectives depend, at least in part, on these first results: and by means of *this* analysis the case is not proven, either for a Copan valley provenance, or for a definable number of production units. Beaudry admits this tacitly, and, in the end, relies on the abundance of Copador in the Copan valley to suggest that it was made there.

The second and third objectives draw their theoretical basis from Rice (1981;

1982), who links the measurement of ceramic attributes and distributions to craft specialisation, mode of production, marketing network and status of the consumer: thereby solving most of our problems of ceramic interpretations, if we care to accept the theory. Welbourn (1985) does not, and I agree with his opinions.

Beaudry's section on 'standardisation' and 'simplification' seems to me ill-conceived. For one type of pottery one recognises, by definition, a degree of uniformity, and the shapes and decoration may well be simple. But the terms 'standardisation' and 'simplification' imply the existence of some other, heterogeneous and complex standard of comparison. And even if one accepts that standardisation and simplification are deliberate 'goals' of production, rather than by-products, the measurement of these qualities (and that of 'technical competence') as quotients of, for example, degrees of specialisation, seems quite implausible. In 1981 Rye said '... the classificatory and control devices used by potters in the past have usually been far less precise than our facility for analysing their results'. Here measurement overwhelms a few simple points, and, contrary to the aims of such an analytical approach, taxes the suspension of disbelief.

Nonetheless, Beaudry wields the theoretical and analytical tools with competence, and it all comes right in the end. The analyses do, at least, define the style, and one is left with a clear idea of the pottery and of its importance in Mayan studies. The conclusions are, mercifully, archaeological, not methodological.

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SARA LUNT

CHASE, A. F. and RICE, P. M. (eds.). *The Lowland Maya Postclassic*. Austin, University of Texas Press, 1985. vii + 352 pp., illus. \$27.50.

The Postclassic period of Maya prehistory is an obscure one. It has been believed that following the general collapse of the Maya civilisation in the central and southern lowlands at the end of the Classic period, c. AD 900, these lowland sites were abandoned. Many of the inhabitants are then thought to have migrated north to the Yucatan where a modified form of Maya civilisation briefly flourished. The modification is considered a result of foreign influence and invasion by groups such as the Toltecs and Itzan. Their influence enabled a social revival at sites like Uxmal, Tulum and Chichen Itza. This interpretation, however, is based on rather limited archaeological observation. Compared to Classic period study investigation has been meagre. The Postclassic period has not received the archaeological attention required to know and understand accurately what happened during this period, c. AD 900-1500. I am pleased to say that this volume helps to redress this situation.

The book consists of a collection of 19 essays - 10 from the AAA meeting of 1979 - as examples of the latest state of the art study on the Maya Postclassic. The papers are separated into 3 geographical sections: the Northern Lowlands (Yucatan and northern Belize), the Southern Lowlands (the Peten), and the Peripheries (regions to the west and south). The editors provide an introduction to each section and round off the text with an introduction and conclusion. There are no specific methodological or theoretical themes, simply a presentation of new research. For this reason the editors' arrangement of papers on a geographical basis is a sensible one.

A few thematic questions are addressed by many authors in their essays though. These are:

1. Was there cultural continuity or discontinuity from the Classic to the Postclassic, as well as during the Postclassic, in the respective sites or regions studied?
2. Is there evidence for external influence on the region?
3. Is there cultural homogeneity or heterogeneity between adjacent regions?

These three interrelated questions are addressed in order to assess the extent of the Classic collapse and the subsequent foreign influence, and to monitor Postclassic change and development. The evidence generally reveals that there was some continuity from the Classic period, there was evidence for foreign influence and there was evidence of regional change and development. There was both cultural homogeneity and heterogeneity between adjacent regions, the southern lowlands were not abandoned to the extent previously believed, and in the peripheral regions the data suggest that the Maya were influencing surrounding cultures as much as these cultures influenced them. In other words, the evidence reveals that the Postclassic lowland Maya continued to survive as a vibrant interacting society. This, to say the least, presents a rather different picture of the lowland Maya Postclassic than the one previously imagined.

This is an important text. For too long too little information has been available on this period. Scholars who attempted to interpret many social, religious, political and economic customs and institutions of the Classic period used native and Spanish ethnohistoric literature to aid their interpretations. In some instances customs remained startlingly similar, eg. sacrifice and ancestor worship, while others had completely changed or even disappeared, eg. political organisation and certain agricultural practices. The study of the Postclassic period will help us to understand how and why some changes occurred and others did not. This volume is only a beginning but it does get us on that road. For that reason this book is essential reading for every scholar and student of the ancient Maya.

BRUCE WELSH

MINNIS, P. E. *Social adaptation to food stress* (Prehistoric Archaeology and Ecology series). Chicago, University of Chicago Press, 1985. x + 239 pp., 33 figs. £18.50.

This book, which must be described as one of the 'New Archaeology', is refreshingly devoid of jargon and tortuous, polysyllabic construction. The style is straightforward, the arguments are presented in a clear and well reasoned sequence, and the author is never afraid to admit when the evidence is poor or the reasoning weak. This is an excellent example of scientific method: the aims of the study are clearly described, background information is presented, the analyses are preceded by discussion of their application and followed by concise summaries, and the conclusions drawn are self-critical and lucid.

The book may be divided into three sections. The first comprises Chapters 1 and 2, and provides an introduction to the study, citing previous work, ethnographic parallels and describes the model of food stress to be used for the study. This is based upon ecological models, so has a sound basis, and logical modifications are made to fit the prehistoric, non-colonial human situation. Essentially the 'model is that with increasing stress severity, there should be increasing social inclusivity of the responses used' (p.23). Minnis defines four levels of response: household, kin group, community and extracommunity, and concludes that each level will require greater cultural change which should be recognisable in the archaeological record.

The second section, Chapters 3 and 4, consists of a detailed summary of the archaeology and natural environment of the region of study, the Rio Mimbres region in south-west New Mexico. A number of sites were surveyed and excavated, providing a sample of all the main environmental zones within the region. In Chapter 4 an attempt is made to reconstruct the past climate of the region, mainly relying upon dendrochronological work in an elegant and simple study, and also using evidence from charcoal and documented evidence.

Chapters 5 and 6 form the main part of the book and the heart of the study: estimation of food stress occurrences and the responses to them. The subsistence economy is

reconstructed using evidence from animal and plant remains (the emphasis on the latter perhaps reflecting the author's specialisation), and from coprolites: maize is shown to be the staple food. Subsistence failure is considered, with land and water availability discussed in relation to the previous reconstruction of climatic fluctuations to provide estimates of periods of crop success and failure. Stress is then calculated on the basis of length and severity of crop failures, with periods of stress being defined in four categories. The naturally available foods are considered in a detailed series of calculations (some rather tenuous), and it is shown that during drought conditions there would have been insufficient natural foods to supplement crop failure for some of the periods considered. Responses to food stress are assessed in terms of exchange systems, with these being divided into extra-, inter- and intra-regional exchange. The data were insufficiently precise to evaluate the last of these, so only the first two categories are assessed. Degree of social integration is also considered, and Minnis concludes that certain periods of stress can be fairly unequivocally defined, whilst others are more imprecise.

The book is rounded off with a concluding chapter which discusses the study in wider terms, noting the limitations for archaeological situations. A true interdisciplinary study, drawing upon sources as varied as cultural archaeology, ecology and climatic reconstruction, this is an excellent model of the use of archaeological and environmental studies to provide an insight into environmental fluctuations and the responses of human communities to them.

BRUCE LEVITAN

LOWE, John W. G. *The dynamics of apocalypse: a systems simulation of the Classic Maya collapse*. Albuquerque, University of New Mexico Press, 1985. vii + 275 pp., 25 figs., 4 tables. \$22.50.

Despite the purple cover and the equally lurid title this is a scholarly and rewarding book. It is also eminently readable in the way the J. E. S. Thompson's books are. To my mind it is probably the most exciting book to emerge from the Mesoamerican scene since Kent Flannery's *The Early Mesoamerican Village*.

Lowe adopts a Systems Analysis approach to the Maya collapse, i.e. he seeks to define the elements important in a system, assesses the development of the relationships between the elements, and investigates their dynamic consequences. The resultant model is a selective synthesis of pre-existing models and new ideas so that a new approach is the end result. This is not in any way, though, an account of obscure statistical practices. Lowe provides a glossary of terms, programs, data used, and defines anything open to ambiguity. The discussion of the potential use, value and reliability of the various categories of data available for model simulation is clearly (and honestly) presented. Lowe pulls no punches in assessing the validity of categories of data and comments on the suitability of certain approaches.

Chapter 3, 'Simple Causal Models of the Maya Collapse', briefly investigates the current theories relating to the environmental/ecological, ideological, technical and socio-political causes posited for the collapse. A *tour de force* in its own right, this is a masterly and stimulating synopsis of all the current ideas concerning the collapse and a criticism of their various elements. This chapter alone is of use to the student; it provides a far more intelligible version of many of those theories than the original authors did.

The succeeding chapter, 'Systems Models', gives a very clear explanation of various models of social dynamics and their applicability to the Mayan collapse. It contains a useful *exposé* of the pitfalls encountered in assessing the value and dependability of the factors that may be involved in any of the models under discussion.

Less satisfactory is the chapter dealing

with historical parallels, which takes Mesopotamia and Greece as comparisons for the Mayan situation. It seems unwise to draw too close a comparison between one set of incomplete data and another, as archaeological data must inevitably be.

The abstract principles behind the statistics used proved too much for me - as I suspect it may for the majority of readers, but that does not detract from the general interest of the book.

And now to the final conclusion as to why the collapse happened. Lowe suggests that the pattern of the collapse is not random. It moved from the outside in, and broadly, from the SW to the NE, not as a wave, but as a definable tendency. The collapse was not, therefore, coeval and cataclysmic. There was a gradual movement towards a system where states moved into a marginally unstable condition, which, on the basis of monument dates seems to have been around AD 750. External pressures gradually exerted an irresistible force driving towards an inevitable collapse in a finite amount of time. The collapse is ultimately attributed not to ecological factors but to administrative failures.

The compelling quality of Lowe's argument resides in a number of factors. Firstly, the mathematical modelling and the archaeological evidence chosen do seem compatible. Thus it makes sense that the Northern (Puuc) sites continued their existence apparently unscathed by the disasters happening away to the south. The distance between the sites concerned would account for this. The occasional elements that are clearly 'southern' which crop up in the north are suggested as being the result of small population influxes. Lowe isolates Northern and Central Belize as areas which were relatively untouched by the collapse. The explanation offered in this case is that Belize had a dense population, and agricultural intensification but lacked a vulnerable socio-political and redistributive apparatus. The presence of the geomorphological barrier (the Maya Mountains) isolated it from the Central Peten. Similarly, the SW origins of the collapse were also rather remote from this eastern area.

The general quality of the book made the minor slip-ups both prominent and irritating: 'Kulcalcan' (p.65) is a mis-spelling

of Kukulcan ('Kukul': feather, 'can': snake), the Maya dialect name for Quezalcoatl ('Plumed serpent'). In turn, this is confused with Topiltzin Quezalcoatl (the man). Similarly, the Motagua River is mis-spelt as 'Montagua'. These are minor points in an otherwise rewarding book. It could easily have been a self-conscious and loose aggregate of half-facts and jargon. The success in communication rests in the clarity of the language used and the fact that Lowe knows what he is talking about. Despite the minor quibbles cited it is clearly a well-researched work, and worth any investment the student or scholar might make.

LEA D. JONES

PLOG, Stephen (ed.). *Spatial organization and exchange: archaeological survey on Northern Black Mesa* (Publications in archaeology, Southern Illinois University at Carbondale Center for Archaeological Investigations). Carbondale and Edwardsville, Southern Illinois University Press, 1986. xx + 377 pp., illus, tables. \$30.00.

In this volume Stephen Plog and his five collaborators, Jeffrey Hantman, Elizabeth Garrett, Margerie Green, Mark Cattin and Michelle Hegmon, present the latest results of the Black Mesa Archaeological Project, a cultural resource management programme in North East Arizona that started in 1967 and is still running. As a result of the Peabody Coal Company's decision to strip-mine a 120 sq km area (the Eastern Lease), the opportunity arose to make an intensive, systematic survey of an area with known archaeological potential but without any previous long-term investigations. The result is a volume which challenges European archaeologists to match the Black Mesa project for theoretical elegance, methodological rigour and definition of soluble problems. This volume is one of the most impressive monuments to the research directions established two decades ago by the members of the South Western Archaeological Research Group.

The cultural sequence at Black Mesa covers two and a half millennia, from c.1300 BC to AD 1150. In the survey a total of 769 sites, including 820 components, was discovered. In the majority of cases the sites fell within the last three centuries of the sequence and this period consequently forms the main focus of analysis. In these 300 years three major cultural changes occur - the transition to food production, a long-term if fluctuating rise in farming populations and the virtual abandonment of the area between AD 1075 and 1150. The principal theoretical problematic is the explanation for these major changes.

Before evaluation of the theoretical project we should turn to the Black Mesa data base. The contributors ground their approaches in the regional scale of investigation, in which the results of site excavation are used to improve understanding of the region as a whole and vice versa. There are, however, two additional advantages for this project which enhance the dialectical relationship between site and region. First, the quantity of prior excavation provides a solid data base which is creatively used to help explain surface artifact patterning. Secondly, the sophistication of the regional chronology, based on regression analyses of tree-ring dates and associated painted wares, is such that phase divisions are based on as short a period as 25 years. Such tight chronological controls will long be the envy of all European prehistorians and not a few Romanists and Medievalists. This chronology provides the basis for the most detailed analysis of settlement and population history and exchange ever attempted in this region. In this way it is also possible to clarify the relationships, causal or otherwise, between most of the relevant cultural and environmental variables.

As regards the origins of food production on Black Mesa (in South Western terms, the Basketmaker-Pueblo transition), a cluster of causative social, technological and environmental changes is identified. The principal problem is that much of the Southwest, and certainly Black Mesa, was marginal to agriculture. An environmental shift towards low regional variation in precipitation is interpreted as permitting a more predictable crop yield, which in turn favoured increased reliance on cultigens. The buffering mechanisms against crop failures include storage (pottery and rooms) and exchange, both centred on public ritual buildings, or kivas,

constructed on increasingly permanent settlements. However, it appears that all these developments followed the spread of food production. Plog promises further excavations at sites straddling this critical transition and emphasises the need for further studies on the productivity of Southwestern cultigens. The origins of agriculture are not yet clear in this area; this is one of the 'Big Questions' of prehistory to which archaeological survey has so far made little contribution.

The adoption of farming and sedentism is used as a platform for the explanation of the long-term growth in population on Black Mesa. The biological and economic factors included in Plog's model rely heavily on Binford and Chasko's Nunamiut demographic studies and represent a major advance over simplistic ideas of population growth as an independent variable. Before assessing the models used to account for this pattern, it is valuable to consider the methods used for estimating Black Mesa populations.

A critique of past techniques of using counts of rooms per site is based on objections that different rooms have different functions and that residential areas do not necessarily leave above-ground traces. Instead, a statistically significant correlation is found between the minimum number of dwellings on excavated sites and the product of site area and surface artifact density on those same sites. The result is used as a means to calculate population size for unexcavated sites. Such a technique ignores the variety of possible relationships between surface and sub-surface deposits, an omission which may account for much of the substantial residual variation left unexplained by the multiple regression curve. Site population data is then combined using two estimates of occupation duration (15 or 25 years), itself based on tree-ring and ceramic dating, to produce population trends over the period AD 850 to 1150. There are two main results: first, a long-term population growth, from c.300 to 1400 people; and secondly, the proposal that, in the period of highest growth rate (AD 1051-1075) over 70% of the increase was produced by immigration.

The fluctuating population levels on Black Mesa is explained by F. Plog in terms of a cyclic pattern of resilient and stable economic strategies. Resilient strategies are used by stable populations of more egalitarian groups in small farmsteads cultivating local resources and having few trade goods.

By contrast, stable strategies were employed by growing populations of ranked societies whose agricultural intensification enabled wider inter-elite trade networks and whose territorial integrity was founded on close ties with central places. A general correlation between the quantity of storage and the size of populations is cited as evidence for this model, despite the objection that societies who required more storage could presumably have constructed it. As with Halstead and O'Shea's model of social storage in the Aegean, there is a tendency for a normative idealist bias in such a model, which excludes any discussion of exploitative relationships.

In discussing the abandonment of Black Mesa, Plog happily rejects theories relying on environmental determinism or carrying capacity assumptions, not least because population decline began long before any climatic deterioration. Instead, Plog favours the theory of systematic hyper-coherence, in which groups are so well adapted to the local environment that their capacity to buffer radical environmental change is reduced. One facet of this model is the adoption of agriculture in neighbouring areas, which removed the potential for buffering exchange systems between foragers and farmers.

The explanations for the three major changes in Black Mesa prehistory are based on a methodology redolent of the golden years of the New Archaeology. The research method is nothing if not problem-oriented and a barrage of statistical techniques helps the reader to understand the relationships between key variables. Whilst the stats are usually impressive, there is an unfortunate tendency to dichotomize continuous variables and attempt to define meaning through the use of significance tests. Indeed, since 262 significance tests are presented *in toto*, 26 of them would indicate significant relationships by chance alone if a 0.1 level of probability is used. Given the range of available multi-dimensional techniques, the over-reliance on significance tests seems a trifle outmoded.

If there are weaknesses in this valuable volume, they lie in the realms of theory. Explanations of cultural change have clearly progressed from the early days of New Archaeology, but mainly through the evolution of more complex models of economy-environment interactions, with buffering

mechanisms representing the 'social' factors. Although important concepts (breeding networks, alliances, exchange networks, etc.) are included, their effects on social action and the creation of power relationships are rarely considered. There remains much potential in modelling the social causes of shifts from resilient to stable strategies and *vice versa*, as there is in operationalising models of alliance structure.

Perhaps the development of a body of genuinely social theory will be the next challenge for Southwestern archaeology. There can be little doubt that the data base in archaeology's 'Garden of Eden' is one of the best available with which to evaluate theories of social power. One can but congratulate Stephen Plog and his associates for their contribution to this state of affairs.

JOHN CHAPMAN

HILLSON, Simon. *Teeth* (Cambridge Manuals in Archaeology). Cambridge, Cambridge University Press, 1986. xix + 376 pp., 110 figs., 18 pls., 38 tables. £27.50.

Teeth play an important role in most peoples' lives, as we are all too often so painfully reminded by frequent visits to the dentist. But few would ever realise just how much information is locked within the complex calcified tissues that constitute both human and animal teeth.

Simon Hillson's book explores the various avenues of dental research and shows the vast potential of studying teeth from archaeological sites.

The first major section deals with general mammalian teeth morphology, form and function and its variation between the major mammalian orders. This section is most useful as a general identification guide to mammalian dentition during preliminary post excavation sorting of bone assemblages. The axonometric illustrations, with detailed and systematic descriptions of each tooth row, provides a

useful broad basis on which general sorting and tentative identifications can be attempted. They provide an intermediate and supplementary step between the archaeological tooth row and the comparative specimen.

Some of the illustrations are a little simplified and on some pages, where more than, say, six appear on one page, they may cause slight visual confusion, appearing crowded and possibly too small. The major headings, being at a similar angle to these tooth row illustrations, may serve to crowd the page even more. However, additional illustrations showing sections through various teeth and occlusal surfaces provide further information to aid separation of morphologically similar teeth.

Dental histology is dealt with in this book in a systematic and comprehensive fashion. Understanding the rather complex nature of dental tissues can be a rather daunting prospect to those not familiar with dental terminology. However, descriptions of the various dental tissues and the processes involved in their subsequent formation are explained in a straightforward manner and should be readily comprehensible to the uninitiated, while providing sufficiently detailed information for students of dentistry.

Ageing, metrical variation and oral pathological conditions are also dealt with in a detailed manner, using mainly human examples, and show where the wide range of the author's expertise lies. Examples of animal studies are less frequent, reflecting where the emphasis of modern and archaeological dental research has occurred. The potential for studying archaeological animal teeth in similar detail to those human studies already undertaken is, however, not quite as fully expanded on as the subject deserves.

The bibliography is extensive and contains a wide range of dental literature which will satisfy even the most fastidious tooth buff who now has ready access to many more of those obscure references.

Teeth will at the very least amaze you merely with the incredible amount and diversity of information which dental studies can provide. A practical and interesting book for the mildly interested and specialist alike.

K. M. DOBNEY

FIELLER, N. R. J., GILBERTSON, D. D. and RALPH, N. G. A. (eds.). *Palaeoenvironmental investigations: research design, methods and data analysis* (Symposium of the Association for Environmental Archaeology 5a) (BAR Int. Ser. 258). Oxford, British Archaeological Reports, 1985. 289 pp., illus. £20.00.

FIELLER, N. R. J., GILBERTSON, D. D. and RALPH, N. G. A. (eds.). *Palaeobiological investigations: research design, methods and data analysis* (Symposium of the Association for Environmental Archaeology 5b) (BAR Int. Ser. 266). Oxford, British Archaeological Reports, 1985. 254 pp., illus. £20.00.

These two volumes are the result of an Association for Environmental Archaeology conference held in Sheffield in 1983. They represent the fifth of the Association's conferences to be published by BAR. The two volumes have different titles: *Palaeoenvironmental Investigations* contains work on sediments, soils, statistical methods and past environments (including geomorphology); *Palaeobiological Investigations* contains work on vertebrates, insects, molluscs and botanical aspects. However, the two volumes must be considered together because they have identical subtitles and editorial introductions which emphasise the importance of research design methods and data analysis in the development of conceptual models in environmental archaeology. This point emerges from some of the papers but apart from that they do not have a distinct theme and are really collections of essays. This must, I think, be regarded as a weakness at a time when environmental archaeologists are being challenged (as Professor Coles challenged us at a subsequent Norwich meeting) to demonstrate our objectives, clearness of purpose and political relevance. These volumes contain little which helps us to meet this challenge; in many papers the emphasis is on data collection rather than aims. Even so they describe a number of promising advances in the boundary areas between traditional academic disciplines, particularly the geoarchaeological and related aspects for which Sheffield is establishing a justifiably good reputation. The high spots of these volumes include several useful papers on taphonomy (including Briggs *et al.*, Stallibrass, Payne and Munson) and some valuable discussions of analytical techniques which are relatively

new to archaeology, such as mineral magnetic properties (Oldfield *et al.*), micromorphology (Fisher and Macphail) and studies of molluscan seasonality (Deith). I particularly enjoyed a paper by Mills on geomorphological factors affecting settlement survey in South East France and a thought-provoking discussion by Thomas of the problems of interpreting sub-fossil landsnail assemblages. Some of the other papers represent progress reports on research which has not yet reached the stage of definitive conclusions.

It will be obvious from the foregoing outline that the content of these two volumes is extremely varied, both in terms of subject matter and, to some extent, relevance to archaeology. At over 250 pages each the volumes represent a mammoth production and we must be grateful to the editors for their considerable work and for the many good and useful papers included (some of which were not given at the original conference). At the same time I for one regret the absence of a clear theme or message which would have helped to ensure that the value of the volumes was more than the sum of the constituent parts.

MARTIN BELL

NELSON, Ben A. (ed.). *Decoding prehistoric ceramics* (Publications in archaeology). Carbondale and Edwardsville, Southern Illinois University Press, 1985. xiv + 441 pp. \$35.00.

There is something of interest for most students involved with ceramics. The diversity and detail of the papers makes it impossible to give an impression of them all, but the themes are divided into four sections: Stylistic Variation and Social Organisation; Organisation of Ceramic Production; Assignment of Form, Function and Context; and Further Lessons from Ethnoarchaeology. A fifth and final section is 'Comment', which is less of the traditional synthesis expectable in composite works of this sort than a

discussion of the evolution and change of ceramic style; in short, a separate contribution in its own right.

For those interested in the application of mathematical methods and models to ceramic studies, there are several papers involving these techniques, eg. 'Use of Multidimensional Scaling to Display Sensitivity and Symmetry Analysis of Patterned Design to Spatial and Chronological Change: Examples from Anasazi Prehistory' (R. G. Matson and D. K. Washburn); 'Changes in Ceramic Production in Pre-Hispanic Oaxaca, Mexico' (G. M. Feinman); and 'Reconstructing Ceramic Vessels and the Systematic Contexts' (B. A. Nelson).

One of the best papers from a practical 'dirt archaeology' stand-point is that by Barbara Stark: 'Archaeological Identification of Pottery Production Locations: Ethnoarchaeological and Archaeological Data in Mesoamerica'. This focuses on ceramic waste material (pre- and post-firing), raw materials, structures associated with firing (kilns and hearths) and the tools of the potter's trade. There is undoubtedly a need to draw attention to the less obvious ceramic-associated features in order for them to be recognised, perhaps in contexts where they may not be automatically expected. This data helps plug the gap all too commonly seen in ceramic studies; ie a close focus on trade patterns to the detriment of the more parochial aspects of ceramic production.

Despite the apparent breadth of subject matter represented in the book, it would have benefited from a more hard-core inclusion of technological studies. Without this, the title is misleading.

The use of the statistical methods presented here should be viewed with healthy caution; other sets of data may be less suitable for such applications. Nevertheless, as a reference work it will be of interest to a wider range of students than many works of a similar nature.

LEA D. JONES

ARNOLD, Dean E. *Ceramic theory and cultural process* (New Studies in Archaeology). Cambridge, Cambridge University Press, 1985. xi + 268 pp., illus. £19.50.

The book provides a synthesis of most aspects of pottery manufacture and subsequent dispersal. Arnold concentrates on current anthropological observations of practice and technique and deliberately avoids involvement with typologies.

Some of the information is interesting and stimulating. For example, the effects of climate on pottery manufacture, where wetness and low temperatures condition the organisation of the potter's year, there are attendant social and economic repercussions. Similarly, a section entitled 'Scheduling Conflicts' presents a good insight into how potting is accommodated with other, daily or seasonal, tasks. The role of men and women in pottery manufacture within these 'schedules' is also considered. The section dealing with 'Sedentariness' looks at the lifestyle of certain groups such as the nomads or semi-sedentary peoples and their relationship with ceramic technology.

The superior technological advantages of clay vessels is emphasised. A large number of common vegetable foodstuffs appear terrifyingly dangerous unless cooked - and ceramic vessels provide the best, all-round cooking devices.

The strengths of this book lie in the pooling of anthropological data relating to pottery manufacture, and the angle afforded in the presentation of the data. Unfortunately, there are many weaknesses. Firstly, the attempt to skew this information into archaeological contexts is unsatisfactory:

'The thesis of this book is that there are certain universal processes involving ceramics that are tied to ecological, cultural or chemical factors. These processes occur in societies around the world and can provide a solid empirical ... base for interpreting ancient ceramics' (pp.ix-x).

The attempt to marry current anthropological practices to ancient evidence is always fraught with danger, but in this case it has encouraged the author to dismiss certain

archaeological data on the grounds that they do not conform to predictive models constructed from modern information. Arnold demonstrates this on p.59 in relation to volcanic ash importation into the Maya Lowlands; most archaeologists would do well to choose their own applications for this type of information carefully and to be circumspect about the implications for archaeology as offered here. Indeed, I remain unconvinced that the archaeological applications were the *primum mobile* of this work; the concluding chapter contains the briefest of arguments for the role of these data in archaeology.

A more general criticism concerns the style of writing, which could easily constitute a barrier to communication. As an example:

'Thus the book attempts to explain why these regularities successfully retrodict evolution of ceramic specialisation in the past' (p.x).

There are many similar examples to be found. The introductory chapter is particularly impenetrable. This is not only due to the excessive use of jargon, but to Arnold's use of the language and concepts of other disciplines, without it seems, a proper understanding of either.

The book does have interesting and useful information to offer, but it will probably find a more comfortable niche in anthropology reading lists, rather than those dealing with archaeological ceramics - the topics related to, and problems posed by them.

LEA D. JONES

KLEJN, Leo S. *Archaeological typology* (translated from the Russian by Penelope Dole) (BAR Int. Ser. 153). Oxford, British Archaeological Reports, 1982. 321 pp., 25 figs. £13.00.

This book is both an historical account

of the role of, and opinions about, typology in archaeology, and an exposition of the author's views of the subject. The first two parts (about half of the book) take us through the history of 'types' and typology, from Montelius to modern writers in Russia, the USA and Britain. A contrast is drawn between 'empirical types', derived from the formal study of material, and 'cultural types', which have a meaning of some sort within their own historical context. The debate, sometimes a bitter one, between those with opposing views (eg. Taylor vs. Brew, Spaulding vs. Ford) is followed through, and the weaknesses of those views are exposed. One is left with the feeling that none of the stated theoretical positions is satisfactory, and clearly this is the author's view, as he says 'it is only possible to identify cultural types from among empirical types if we base ourselves on archaeological cultures' (p.141), an apparent reversal of usual archaeological practice.

The account seemed, at this stage, to have two main weaknesses: (i) although dealing partly with mathematical concepts, and accepting the relevance of mathematics, the author does not use mathematical language where it would be appropriate, and indeed desirable, to clarify certain points; (ii) the author seems to give too much weight to what archaeologists say, rather than what they actually do. Archaeologists are often better at doing archaeology than at creating a theoretical framework to explain what they have done.

Having lifted the debate to the level of cultures, the author has a long section (Part 3) on 'what is an archaeological culture?'. Again, we have a history of the theory, and the typological question is raised to a higher level by posing the question, are archaeological cultures 'real' or simply convenient constructs? After devoting a chapter to the question of the relationship between 'culture' and 'ethnos', and looking at other questions such as the contrast between 'type' and 'style' (p.190 ff), and the use of inductive or deductive argument (p.223), the author brings us full circle to archaeological cultures as a starting point for the study of types.

After the previous section, this one felt rather repetitive. The author seems willing to create tidy logical structures and introduce new terms to fill spaces in them which might better be left blank. In

pp.197-202 there are at least twenty new terms for various levels of association and aggregation of types, for example, concern-stencil-coherent-ensemble-booklet-period. New terms are needed for new concepts, but on this scale the outcome can only be confusion. Little use is made of this terminology in the rest of the book.

Finally, the last 30-40 pages give us the author's own views. He calls for a new strategy, which he calls 'system strategy', to replace the inductive and deductive strategies which have been tried and found wanting. His strategy is a 'top-down' approach, proceeding from culture to cultural types to culturally significant attributes, in contrast to the conventional 'bottom-up' or 'grouping' approach. He defines types as 'stable schemes showing how the appearance of the artefacts corresponds to their position in characteristic cultural contexts'. The ground rules of the strategy are provided by four 'principles of impossibility' (pp. 266-68, cf. Heisenberg's Uncertainty Principle), and the launching platform is intuition. He points out that even the most analytical work starts from intuition in the exposure and selection of attributes. Before explaining his approach in detail, the author points out that the implementation of such a strategy is not new - many archaeologists have worked in the ways he suggests - but that what is new is the theoretical basis, which he sees as a light to the feet of the stumbling practitioner (p.286).

It is difficult to do justice to the proposed procedure (pp.276-84) in a summary. The first stage, 'a priori exposure of cultures', is roughly speaking the recognition of the spatial and stratigraphic patterning inherent in one's material, including the recognition of 'evident' types and the old idea of 'type-fossils'. Style is seen as an important factor, which cannot be formally defined but which possesses a ready identifiability. Next comes the deduction of types from cultures; simplest are the evident empirical types, but the rest must be teased out by means of a 'structuro-contextual plan' of the culture, which generalises the remains and traces of different types of activities, taking into account theory, ethnographic parallels, archaeological common sense and comparison with other, related, cultures. Finally one has to look at the diffused material, where there are no clear-cut boundaries and the empirical types are indistinct.

This section is unconvincing without a worked example based on real material, preferably a reworking of an existing typological system. The author acknowledges this point, and explains why it could not be done. As he implies, the test of his approach is whether it is taken up successfully by a fresh generation of archaeologists, and he allows a space of 20 years for this to happen (or not). Unless there is an early convincing application of the 'system strategy' to show the way and encourage others, its acceptance is unlikely. Nevertheless, the book makes some good points, eg. 'the traditional under-estimation of the theoretical implications of the initial processing of material' (p.89), and would be food for thought for anyone about to embark on a typological exercise.

The translation is good and there are few obvious problems with technical terms - 'goblet' surely means 'beaker' (p.57 and elsewhere), while 'morphology' might be better than 'topology' (p.77). The usual BAR standard of litho-printed typescript does not make the book easy to read, and there is a serious production error (pp.215-16 repeated in place of pp.211-12) in my copy at least.

CLIVE ORTON

MACREADY, Sarah and THOMPSON, F. H. (eds.).
Archaeological Field Survey in Britain and Abroad (Occasional Paper [New Series] VI, Society of Antiquaries).
London, Society of Antiquaries of London, 1985. 251 pp., 80 figs. £15.00.

Britain has always had a very strong tradition of archaeological fieldwork involving techniques other than excavation. The Royal Commission on Historical Monuments' surveys remain models of their kind. Individuals like O. G. S. Crawford in the 1930s and P. J. Fowler in the 1960s stand out as trailblazers in the art of non-destructive field archaeology. With an expansion of resources in the 1970s, together with a

fundamental shift away from the concept of sites separated by blank areas, numerous extensive surveys were undertaken, both in Britain and abroad. These surveys have revolutionised how archaeologists now think of man in the landscape.

This volume is essentially a series of case studies from Great Britain, France, Spain, Yugoslavia, Greece and North Africa. The unifying theme is the study of regions or landscapes rather than sites. Naturally, with regions as diverse as the Lincolnshire Fens and Dalmatia, approaches and methods will vary.

Section 1 consists of a general overview of field survey in Britain by Roger Mercer followed by four case studies from Eastern England, Lincolnshire, Cornwall and Berkshire. These neatly contrast surveys of areas with visible structures, like Cornwall, and areas where the archaeology survives largely as scatters of artefacts in various densities on the landscape.

The division between the basic methodologies required in a highland zone and a lowland area is reflected in all later sections. Section 2 considers three surveys in France, all involving detailed surface collections of artefacts. The paper by R. F. J. Jones *et al.* on survey in Catalunya in the section on Spain is particularly important in its consideration of exactly what an archaeological survey can achieve given that landscapes are not static and that archaeological data are always being eroded, moved, changed, buried, exposed and reburied again.

Throughout the first 224 pages of this book there is little doubt as to why archaeologists are expending time, labour and money on field survey. It is to advance archaeological knowledge. Section 5 on North Africa brings archaeologists rapidly down from their ivory towers. 'If archaeology is to be practised at all, then at least let it be relevant to the needs of people today.' So Colonel Ghaddafi initiated a survey of Ancient Agriculture on the Saharan Fringe. The resulting study of Roman agriculture in Libya is a model of both archaeological fieldwork and relevance of archaeology to people today.

This volume is extremely well produced with eighty clearly reproduced line drawings and eight plates. At £15.00 it is very good value and must be considered essential reading for all students of archaeology, parti-

cularly anyone contemplating undertaking a field survey.

P. L. DREWETT

HIETALA, Harold J. (ed.). *Intrasite spatial analysis in archaeology* (New Directions in Archaeology). Cambridge, Cambridge University Press, 1984. vi + 284 pp., illus. £30.00.

This book consists of 12 examples of work on the spatial aspects of archaeological sites from the early Pleistocene to 20th century ethnographic examples, and including village, pueblo, metropolis and fortress sites as well as the expected hunter/gatherer sites. The editor has added a brief introduction and some thoughts on future directions.

Three related themes emerge: (i) the need to develop methods of analysis based on archaeological models, following a period when many techniques were simply borrowed from other disciplines; (ii) the need to ensure congruency between the questions being asked and the techniques used to answer them; and (iii) the need to look at problems on an appropriate scale (expressed as a contrast between 'global' and 'local' methods). Each author tackles one or more of these problems, as well as looking at more specific topics.

Of the seven methodological papers, three present a 'new' approach (Chapter 5, Berry, Kvamme and Mielke's multi-response permutation procedure [MRPP]; Chapter 6, Johnson's local density analysis; Chapter 13, Whallon's unconstrained clustering), while four develop the use of an existing statistical technique (Chapter 4, Hietala, log-linear models; Chapter 9, Ciolek-Torrello, factor analysis, principal components analysis and multi-dimensional scaling; Chapter 10, Cowgill *et al.*, cluster analysis and discriminant analysis; Chapter 12, Spurling and Hayden, Fisher's exact test and Dacey's mean splitting procedure).

MRPP, a conditional technique based on fixed data locations and variable data types, seems ideal for some sorts of spatial analysis, eg. of cemeteries. The example chosen does not show off the technique to its advantage - surely a simpler measure of association than one based on *all* inter-point distances could have been found, and the use of circular quantiles as measures of dispersion seems unnecessarily restrictive when elliptical ones would have been nearly as easy and much more general. The mathematics in this paper may deter some potential users, but the approach is worth careful consideration.

Although 'new' in the sense of developed specifically for archaeology, local density analysis has been around for some time (first published by Johnson, 1976). Graham (1980, 110) pointed out that in some cases a spatial distribution could in this approach appear to be more similar to another than to itself, but no notice seems to have been taken of this criticism. The technique can now be seen as a special case of a K-function (Ripley, 1976).

Unconstrained clustering is the most original of the techniques. Whallon's approach, which in brief consists of (i) smoothing the spatial distributions of artefact types, (ii) classifying locations according to the relative proportions of the smoothed values, (iii) using cluster analysis to group points into 'clusters' as a basis for interpretation, succeeds in removing many of the constraints for which other techniques are rightly criticised, eg. on the size, shape or number of clusters. The author admits to one serious problem, that of 'overlapping clusters'; given two overlapping distributions of single artefact types, the method will discover at least three clusters, including a 'mixed' one, which must be argued away in the interpretation. A second drawback is that smoothing the data actually spreads the distributions out into surrounding areas, creating a sort of 'halo' effect, so that two completely distinct clusters would give rise to a 'mixed' cluster in the empty space between them. This effect is strongly apparent in the worked example, where clusters supposedly containing an average of up to 25% of a particular artefact type do not have a single artefact of that type lying within their boundary. Although there are only five artefact types, two of which have very simple spatial distributions, 13 clusters are created. Their 'remarkable'

homogeneity reflects the simplicity of the distributions. The interpretation of the site appears to owe more to the undoubted skill of the author than to the usefulness of the technique.

The two 'urban' papers (Chapters 9 and 10, Ciolek-Torrello on pueblos and Cargill *et al.* on Teotihuacan) give interesting applications of classificatory techniques in a spatial setting. They are especially valuable for the comparison of different techniques applied to the same data, and would be a useful starting point for anyone studying (eg.) the distribution of pottery across a town. Fletcher's approach to a medieval fort (Taskun Kale, Chapter 11) is frustrating. If valid, it has tremendous implications for the study of urban and military sites, but because he assumes it is, and straightjackets his data into it, it is impossible to tell whether or not he is justified. A critical reworking of the data would be valuable.

Many useful archaeological points are made in the other papers. For example, Kroll and Isaac (Chapter 2) discuss how patterning arises on early Pleistocene sites, and Hodder and Hivernel (Chapter 7) examine the blurring effects of post-depositional factors. A notable point throughout the book is the way in which archaeological reality tempers statistical enthusiasm.

Overall, I found the archaeological aspects of this book interesting and the statistical ones rather disappointing. While it is right to cease to rely on techniques developed for (eg.) plant ecology, and to seek ones more appropriate to archaeology, it seems unwise to ignore the theoretical work being done by statisticians like Ripley (one very general reference in Chapter 14), Besag or Diggle or the Spatial Data Project at the University of Bath (no references). Independence is good, insularity is not.

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CLIVE ORTON

LANGLEY, Susan B. and UNGER, Richard W.
Nautical archaeology: progress and public responsibility (BAR Int. Ser. 220). Oxford, British Archaeological Reports, 1984. 214 pp., illus. £10.00.

This report incorporates papers and discussions of internationally respected archaeologists who took part in a 1983 conference in British Columbia, organised by the Archaeological Institute of America and the Vancouver Maritime Museum.

The organisers felt that while world-wide interest in underwater archaeology has been growing, policies for dealing with increased exploration have been slow to appear. They hoped that by exchanging experiences the professionals, amateurs and lawmakers could learn where pitfalls lie and how best to respond to them.

The opening speaker was Margaret Rule, to whom the volume is dedicated, although due to a 'technical failure' her paper has not been included. Instead, there are a number of less familiar excavations, such as the wreck of the USS Monitor, which sunk off the coast of North Carolina after the first battle between ironclad warships during the American Civil War; and a paper on the Dutch treatment of some 350 wrecks discovered in the Zuider Zee since land reclamation began there in 1942.

The legal position of historic wrecks, world-wide, is investigated in the first paper, surveying recent legal developments relating to nautical archaeology. Whereas coastal waters enjoy a degree of control, shipwrecks on the deep seabed are at present subject only to laws of salvage, which are 'seriously dysfunctional for the preservation of the underwater cultural heritage'. (What a pity the discovery of the Titanic post-dates this paper.)

These papers propose a range of solutions to the problem of the protection of the underwater heritage: the USS Monitor, for example, was designated a marine sanctuary in 1975, and in Canada the Fathom Five Provincial Park is Ontario's only park to incorporate 72 square kilometres of lake bed.

Conservators emphasise the dangers of hasty investigation, without due regard to the preservation of artefacts; and the emphasis throughout is on the value of historic shipwrecks as an irreplaceable and non-renewable resource, deserving due care and protection.

ANNE JONES

RENFREW, Colin. *Approaches to social archaeology*. Edinburgh, Edinburgh University Press, 1984. viii + 430 pp., illus. £17.50.

This is a collection of Colin Renfrew's most significant theoretical papers published since 1972. This in itself is useful for all interested in social archaeology, but what makes the book particularly valuable is the first chapter and short introductions to each of the five sections of the book. These provide some link between the papers, and update with full bibliographic support the debates since the papers were written. For many already familiar with Renfrew's work these section introductions will be the most interesting and stimulating elements in the volume.

Chapter 1 sets out to justify social archaeology. Within an historiographic perspective Renfrew briefly explains the five themes on which he has concentrated. He also discusses the value of generalising about human behaviour, but is firmly against the search for general laws. Instead, he supports generalisations that are valid given certain conditions.

Section One is called 'Societies in Space: The Landscape of Power'. Here

Renfrew is concerned with recognising social units (which he calls polities), not just archaeological cultures. He sees power concentrated in central persons, and there are spatial correlates of this that can be archaeologically detected. Some of the assumptions can be considered simplistic - the largest centres were not necessarily the most important, as can now perhaps be seen with southern British hillforts. But here, as elsewhere, Renfrew is anxious to defend these papers as just a start, often tentative, to the study of social archaeology.

Section Two, 'Trade and Interaction', introduces the concept of the early State Module. This is an autonomous area served by a central place which, together with similar adjacent areas, forms a civilisation. Trade and exchange between these ESMs and also beyond is seen as a vital factor in social change. Renfrew is here excited by information flow, something that has since been further studied by others.

Section Three concentrates on the phenomenon of major monuments in simple societies with particular emphasis on megaliths, Polynesia and Neolithic Wessex.

Section Four is of wider interest - 'Systems Thinking: The Explanation of Continuous Change'. Renfrew has been one of the most vehement supporters of systems thinking and this could be considered the most significant part of the book. Renfrew takes a side-swipe at Marxist analyses in the section's introduction, but this would have benefited from being expanded into a rather more detailed critique. As it stands, it raises many questions and answers too few. Perhaps another paper elsewhere will be more expansive? Renfrew believes that systems thinking can accommodate internal change, and indeed is able to explain it. Some other users of the systems approach would disagree, but Renfrew, rightly in the reviewer's opinion, believes that change can come about from within a system. One of the internal causes of change that Renfrew emphasises is that of growth; as a system grows, it is likely to become more complex.

The final section, 'Discontinuity and Long Term Change', leads on from the previous one and catastrophe theory is applied to archaeology. Whilst the explanation of sudden change by gradual processes reaching a crisis point is valuable, the mathematical details seem unrelated to archaeological

data.

Colin Renfrew and Edinburgh University Press should be congratulated on the production of this fine book; it will be a valuable tool for students and research workers alike. Renfrew's most useful theoretical papers can now be found between two covers instead of spread over a dozen diverse publications. Whether one agrees or disagrees with the assumptions behind Renfrew's approach, it is now much easier to examine these and the type of social archaeology that can come from them.

HAROLD MYTUM

McCULLAGH, C. Behan. *Justifying historical descriptions*. Cambridge, Cambridge University Press, 1984. xv + 252 pp. £25.00 (hardback); £7.95 (paperback).

This densely-written book discusses the inferences that can be drawn from historical sources and whether historical 'truth' can ever be achieved. Its main interest to an archaeological audience lies in its explicit descriptions of how conclusions are drawn from evidence (McCullagh deals on the whole with written sources as his evidence, but in many cases 'archaeological' can be substituted for 'historical' in his thesis). We may think that archaeological sources have an advantage over historical ones in that archaeologists excavate inanimate material rather than deal with written records which, in the nature of things, must reflect the bias of the writer. Yet a glance at this book will show the interpreter of archaeological evidence the pitfalls which may be fallen into even if he believes his evidence to be objective (although subject to the vagaries of deposition, preservation, retrieval, etc.).

A glance may not be sufficient, however, for this book is hard-going. Much of it seems to be repetitious at great length, and the conclusions do not really live up to the expectations. Nevertheless it will be useful

to archaeologists worried about the philosophical base of their subject. But do not be misled into thinking that it can be dipped into for useful snippets; it is a book which will take a long time to master and appreciate. It is up to individuals to decide whether their time might not have been better spent elsewhere.

HELEN CLARKE

research and experimentation in the field have greatly extended our expertise. The authors have remained throughout at the forefront of this development and have modified, expanded or rejected their techniques as described in the book. Their work has always been founded on an exemplary use of collaboration. The influence this book should have on our attitude, and guidance on our approach remain undiminished.

C. W. OLDENBOURG

MORA, Paolo, MORA, Laura and PHILPOTT, Paul.
The conservation of wallpaintings
(Butterworth series in conservation and museology). London, Butterworths, 1984.
494 pp., 154 pls., 13 col.pls. £16.00.

HAWKES, Jacquetta. *Mortimer Wheeler: adventurer in archaeology*. London, Weidenfeld & Nicholson, 1982. 388 pp., 16 pls., 8 figs. £10.95.

I believe that the most important ingredient of conservation is the approach or attitude. Coming from Germany where crafts are very thoroughly taught, I have seen that practical or technical excellence does not necessarily produce a responsible conservator. The crucial ingredient of this responsibility is that collaboration is sought when and where necessary. This is especially true today when the practitioner will find it virtually impossible to have an in depth knowledge of all the latest research, techniques and materials available.

It fell to the Italians to formulate the foundations of our modern conservation ethics (Brandi Report), and it is therefore not surprising that it was an Italian couple, Madame and Prof Mora in collaboration with Prof Philpott, who provided us with the first complete standard *oeuvre* on wallpaintings worldwide - their purpose, use, history, construction, development and (for the initiated practitioner!) their treatment. It is the fascinating lucidity with which each aspect is defined and assessed which makes this book valuable not only for all those concerned with wallpaintings, whether as an art historian, administrator or conservator, but for anybody involved in conservation.

It is inevitable that since this book was first published some ten years ago,

Although five years have passed since Jacquetta Hawkes's biography of Wheeler was published, it is appropriate that it should be reviewed in the *Bulletin* of the Institute that he founded, especially as this year sees the Golden Jubilee of that event in which he took so much pride. He might have been less proud of its new association with the College where he was both student and Secretary and which he described as 'a hypertrophied monstrosity as little like a college as a plesiosaurus is like a man'. The book provides a vivid picture of the man, and particularly of the energy and drive that typified everything he undertook. His ability to organise and his gift for leadership were developed in the First World War. This experience gave ample opportunity for resourcefulness and invention and taught him the value of discipline which he imposed upon himself in most aspects of his life and invariably expected in others.

These qualities stood him in good stead in his future career. Whether as an administrator, setting the National Museum of Wales or the Archaeological Survey of India to rights, or as the archaeologist in the field at Verulamium, Maiden Castle or Mohenjodaro, Wheeler was single minded about everything that he undertook and spared neither himself nor others. This dual role

culminated in his final task as Secretary to the British Academy, where money had to be raised, young archaeologists encouraged and a moribund organisation given new life.

The author draws much of her material from her own memory. This enhances the air of authenticity, though it is possible to detect the parts where she is not able to write from her first hand recollections, especially in the sections on the Second World War and period when Wheeler was in India. The 'Hero figure' of whom she speaks dominates throughout. Wheeler's many services to archaeology are apparent, and although some of his theories and techniques have now been discounted, perhaps his greatest achievement was that of drawing the attention of the public to its importance. This he did most effectively through his involvement in television and through Swans Tours. This 'popularising' of the discipline made him him, above all else, a successful fund-raiser, and without funds archaeology cannot succeed.

The book was written too soon after Wheeler's death and from too personal an angle to become established as the definitive biography. It conveys an accurate view of his personality and achievements, his faults are not glossed over and it is both informative and enjoyable.

I. C. McILWAINE

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BOOKS RECEIVED.

The following books have been received. The fact that they are listed here does not preclude their review in a later issue.

- ACTA INTERDISCIPLINARIA ARCHAEOLOGICA.* Tomus III. Nitra, Archeologicky Ustav Slovenskej akademie vied, 1984. 331pp. no price given.
- BLAZQUEZ MARTINEZ, J.M., GARCIA-GELABERT PEREZ, M.P. & PARDO, F.L. *Castulo V.* (Excavaciones arqueologicas en Espana) Madrid, Ministerio de Cultura, 1985. 396pp. 164 figs. Price not stated.
- BLAZQUEZ, J.M. & MEZQUIRIZ, M.A. *Mosaicos Romanos de Navarra.* Madrid, Instituto espanol de arqueologia del consejo superior de investigaciones cientificas, 1985. 111p., 62 pls. Price not stated
- BRUMFIEL, E.M. & EARLE, T.K. *Specialization, exchange and complex societies.* (New directions in archaeology) Cambridge: Cambridge University Press, 1987. 150pp., illus. £25.00
- BULLETIN of the Anglo-Israel Archaeological Society*, 1985-6. London, 1986. 79pp., illus. Price not stated
- BURGOYNE, M.H., *Mamluk Jerusalem: an architectural study; with additional historical research by D.S. Richards.* published on behalf of the British School of Archaeology in Jerusalem by the World of Islam Festival Trust, 1987. xii + 623pp., 64 figs., 2 plans in slip case, 64 pls. + 32 col. pls. Price not stated
- CLEERE, H. & CROSSLEY, D. *The iron industry of the Weald.* Leicester University Press, 1985. xvi + 395pp., 74 figs. £47.50
- CLOSE-BROOKS, J. *Exploring Scotland's Heritage: The Highlands.* Edinburgh, R.C.A.H.M.S./H.M.S.O., 1966. 184pp. Map. illus. £6.95
- CONNAH, G. *African civilizations: precolonial cities and states in tropical Africa: an archaeological perspective.* Cambridge, Cambridge University Press, 1987. xi + 259pp., illus. Hardback: £25.00; paperback: £7.95.
- CRAWFORD, B.E. *Scandinavian Scotland* (Scotland in the early Middle Ages, 2) Leicester U.P., 1987. xii + 274pp. 80 figs. Hardback: £30.00; paperback: £9.95.
- FARRINGTON, I.S. *Prehistoric intensive agriculture in the tropics.* (BAR International Ser., 232) 2 vols. Oxford, B.A.R., 1985. ix + 881pp., illus. £43.00
- FIEDEL, Stuart J. *Prehistory of the Americas.* Cambridge, Cambridge University Press, 1987. x + 386p., 113 figs. Hardback: £30.00; paperback: £10.95
- GASULL, P., LULL, V. & SANAHUJA, M.A. *Son Fornes I: la fase Talayotica: ensayo de reconstrucción socio-económica de una comunidad prehistórica de la isla de Mallorca.* (BAR International ser, 209) Oxford, BAR, 1984. 187pp. 65 figs. 21 pls. £14.00
- GODWIN, Sir H. *History of the British flora: a factual basis of phytogeography.* 2nd. ed. Cambridge: Cambridge University Press, 1984.

- GOING, C.J. *The mansio and other sites in the south-eastern sector of Caesaromagus: the Roman pottery; with contributions by J. Bayley [and others]*. (Chelmsford Archaeological Trust report, 3.2) (CBA Research report, 62) London, published by the Chelmsford Archaeological Trust and the Council for British Archaeology, 1987. vii + 123pp. 59 figs. 2 pls. £16.95.
- HAAS, J., POZORSKI, S. & T. *The origins and development of the Andean State*. (New directions in archaeology) Cambridge: Cambridge University Press, 1987. vi + 188pp., illus. £30.00
- HADWICK, J. [et al]. *Corpus of Mycenaean inscriptions from Knossos*. Vol. 1: (1-1063). CUP/Ed. dell'Ateneo, 1987. (Incunabula graeca, 88).
- HARDING, D.W. *The Iron Age in lowland Britain*. Routledge & Kegan Paul, 1985. Paperback ed. (First published 1974.) xviii + 260pp., 81 figs., 37 pls. £7.95.
- HAYDEN, B. *Lithic studies among the contemporary Highland Maya*. Tucson, The University of Arizona Press, 1987. xii + 387pp., illus. \$35.00
- HEGGIE, D.C. *Megalithic science: ancient mathematics and astronomy in N.W. Europe*. London: Thames & Hudson, 1981.
- HODDER, I. *Archaeology as long-term history*. (New directions in Archaeology). Cambridge, Cambridge University Press, 1987. vii + 145pp., illus. £25.00
- HUNTER-ANDERSON, R.L. *Prehistoric adaptation in the American Southwest*. (New studies in archaeology) Cambridge, Cambridge University Press, 1986. xiv + 143pp., 16 figs. 12 tpls. £22.00
- HURST, H.R. *Gloucester, the Roman and later defences: excavations on the E. Defences and a reassessment of the defensive sequence; with the assistance of L.F. Pitts*. (Gloucester archaeological reports, v.2) Gloucester, Gloucester Archaeological Publications, 1986. ix + 150pp., illus (figs & maps). £17.95.
- JACOBSON, J. *Studies in the archaeology of India and Pakistan*. Warminster, Aris & Phillips in cooperation with the American Institute of Indian Studies, 1987; originally published in New Delhi by Oxford & I.B.H. Publishing co. xx + 327pp., illus. £16.00
- KOCH, U. *Die Metallfunde der frühgeschichtlichen Perioden aus den Plangrabungen, 1967-1981*. (Der Runde berg bei Urach, bd 5) 2 vols. Heidelberg, Carl-Winter-Universitätsverlag, 1984. 272pp., illus.; 93 tpls., 47 fold. maps. Price not stated
- KSAR AKIL, LEBANON.
- AZOURY, I. *Ksar Akil, Lebanon: a technological and typological analysis of the transitional and early Upper Palaeolithic levels of Ksar Akil and Abu Halka*. Vol. 1, edited with an introduction by C. Bergman and L. Copeland. (BAR International ser., 289) 2 vols. Oxford, BAR, 1986. vii + 244pp., 202 figs., 122 pls. £30.00
- BERGMAN, C.A. *Ksar Akil, Lebanon: a technological and typological analysis of the later Palaeolithic levels of Ksar Akil*. Vol. 2: Levels xiii-vi, with contributions by L. Copeland and M. Newcomer. (BAR International ser., 329). Oxford, BAR, 1987. iii + 334pp., 87 figs. 2 plans, 29 pls. £20.00
- KEPPIE, L. *Scotland's Roman remains: an introduction and handbook*. Edinburgh, J. Donald, 1986. ix + 188pp. £7.50

- KIRCH, P.V. *Island societies: archaeological approaches to evolution and transformation*. (New directions in archaeology) Cambridge University Press, 1986. viii + 99pp., illus. £19.50.
- LIBBY, L.M. *Past climates: tree thermometers, commodities and people*. Austin, University of Texas Press, 1983. xiv + 143pp., illus. \$25.00
- MACKENZIE, A. *Archaeology in Romania: the mystery of the Roman occupation*. Robert Hale, 1986. 183pp., 16pls. £14.95
- MATHIEN, F.J. & McGUIRE, R.H. *Ripples in the Chichimec Sea: new considerations of Southwestern-Mesoamerican interactions*. (Publications in archaeology) Carbondale & Edwardsville, Southern Carolina University Press, 1986. xvii + 300pp., 12 figs., 5 tbls. \$32.50
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